This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

B 456935

THE RURAL SCIENCE SERIES

BY L·H·BAILEY

CO-OPERATION IN AGRICULTURE

POWELL

1837
ARTES
VERITAS
SCIENTIA
LIBRARY OF THE
UNIVERSITY OF MICHIGAN
E PLURIBUS UNUM
TUEBOR
SI QUAERIS PENINSULAM AMOENAM
CIRCUMSPICE

H II
14
.U5
P88

The Rural Science Series

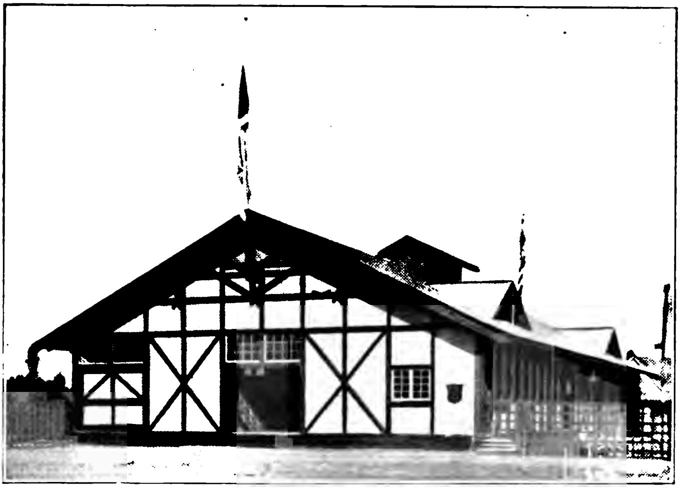
EDITED BY L. H. BAILEY

COÖPERATION IN AGRICULTURE

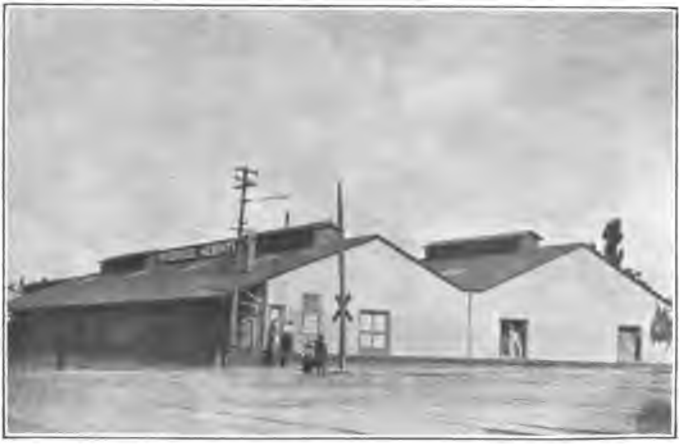
The Rural Science Series

- The Soil.
- The Spraying of Plants.
- Milk and Its Products. *Enlarged and Revised.*
- The Fertility of the Land.
- The Principles of Fruit-Growing.
- Bush-Fruits.
- Fertilizers.
- The Principles of Agriculture. *15th Edition.*
- Irrigation and Drainage.
- The Farmstead.
- Rural Wealth and Welfare.
- The Principles of Vegetable-Gardening.
- Farm Poultry. *Enlarged and Revised.*
- The Feeding of Animals.
- The Farmer's Business Handbook.
- The Diseases of Animals.
- The Horse.
- How to Choose a Farm.
- Forage Crops.
- Bacteria in Relation to Country Life.
- The Nursery-Book.
- Plant-Breeding. *4th Edition.*
- The Forcing-Book.
- The Pruning-Book.
- Fruit-Growing in Arid Regions.
- Rural Hygiene.
- Dry-Farming.
- Law for the American Farmer.
- Farm Boys and Girls.
- The Training and Breaking of Horses.
- Sheep-Farming in North America.
- Coöperation in Agriculture.

PLATE I.—Packing-houses for Oranges. Chapters IV, VIII.



A Modern Orange Packing-house.



An Orange Packing-house. Riverside, California.

U of M

COÖPERATION IN AGRICULTURE

BY

G. HAROLD POWELL

GENERAL MANAGER OF THE CALIFORNIA FRUIT GROWERS' EXCHANGE
FORMER ASSISTANT CHIEF OF THE BUREAU OF PLANT INDUSTRY
AND FORMER POMOLOGIST IN CHARGE FRUIT TRANSPORTATION AND STORAGE INVESTIGATIONS, UNITED
STATES DEPARTMENT OF AGRICULTURE

New York
THE MACMILLAN COMPANY
1913

All rights reserved

COPYRIGHT, 1913,
BY THE MACMILLAN COMPANY.

Set up and electrotyped. Published April, 1913.

Norwood Press
J. S. Cushing Co. — Berwick & Smith Co.
Norwood, Mass., U.S.A.

O5Je13'S

PREFACE

THIS volume is intended as a discussion of the principles that underlie the organization and management of the American coöperative associations in agriculture. The application of the methods of coöperation to the production, handling, distribution, and sale of farm crops and to other agricultural activities, is commanding the attention of farmers, legislators, and economic investigators throughout the United States and Canada.

The American coöperative movement, even in the oldest coöperative organizations, is in the formative stage. The principles of coöperation are not generally understood, and few persons appreciate the difference between a coöperative organization formed for the benefit of its members, and a corporation formed for pecuniary profit. The so-called coöperative associations in the United States and Canada have usually been formed as corporations for profit, and do not differ in principle from the ordinary stock corporations, although an effort has often been made by the organizers to conduct them along coöperative lines.

The development of the agricultural coöperation movement needs to be preceded in most of the states by legislation that will permit the formation of non-profit coöperative associations or the formation of profit corporations that can be operated legally for the benefit of the members.

The writer has discussed some of the legal questions involved, the financing and management of such organizations

Reclass. 4-15-28 M.V.P.

255488

as they have appeared to him as the result of experience, and a general study of the coöperative question. These principles are then illustrated by showing how they are applied to certain agricultural crops, such as animal and plant improvement, the handling of grain and dairy products, cotton and grain, the distribution and sale of crops, and the coöperative purchase of supplies. The application of the coöperative method to rural credit, irrigation, the telephone, and insurance is also briefly discussed.

It is not attempted to cover the entire agricultural coöperative movement in America in this discussion. There are thousands of coöperative societies in the United States and Canada, and an enumeration of their activities would make a volume far beyond the limits of this discussion.

G. HAROLD POWELL.

Los Angeles, Cal.,
February 1, 1918.

CONTENTS

CHAPTER I

CHANGES IN INDUSTRIAL METHODS (PAGE 1)

PAGE
Changes in Labor Methods 3
Readjustment in Agriculture has been Slow 4
Industrial Methods Difficult to apply to Agriculture 4
The Independence of the Farmer 6
Prosperity of the American Farmer 6
The Economic Loss in Rural Efficiency 8
Dissatisfaction among the Farmers 10
Efforts towards Organization 11
Need of Better Business and Better Farming 13
Organization Methods still Experimental 15

CHAPTER II

FUNDAMENTALS IN COÖPERATION (PAGE 18)

The Unit must lie in a Restricted Area 19
Agricultural Organization must be Born of Necessity 21
The Organization should be Coöperative in Form 24
The Membership in a Farmers' Organization 25
The Voting Power of Members 27
The Membership Agreement 29
    A Citrus Fruit Membership Agreement, as an Illustration . 32
Management 36
    Difficulties in Management 37

CHAPTER III

LEGAL FEATURES OF COÖPERATIVE ORGANIZATIONS IN AGRICULTURE (PAGE 40)

PAGE
The Difficulty of organizing under Present Laws 42
New Legislation needed 44
  The Wisconsin Law 45
  The Nebraska Law 46
  The California Law 46
Principles to be included in New Laws 50

CHAPTER IV

THE ORGANIZATION OF A FARMERS' COÖPERATIVE ASSOCIATION (PAGE 52)

Charter of a Citrus Fruit Association 52
The By-laws 55
The Federation of Coöperative Associations 64
  Necessity of a Federation of Associations for handling Farm Products 65
  Coöperative Organization of the Federation 67
  Necessity of preserving the Individuality of the Associations 68
  The Organization of a Federation 70
  Coöperative Associations and Public Policy Questions . . 73
  The Citrus Protective League of California 75

CHAPTER V

FINANCING A COÖPERATIVE ORGANIZATION (PAGE 78)

Citrus-fruit Organizations 78
Annual Financing 79
Difficulties in Financing 81
The Payment of Dividends 83

CHAPTER VI

BREEDERS' AND GROWERS' ASSOCIATIONS (PAGE 87)

PAGE
Coöperative Cow-testing Associations 89
  The Danish Example 89
  The Plan of a Cow-testing Association 91
Articles of Agreement in a Cow-testing Association . . . 93
The Coöperative Breeding of Live-stock 94
  Coöperative Cattle-breeding in Denmark 95
  Coöperative Cattle-breeding in the United States . . . 97
    In Wisconsin 98
    Coöperative Cattle-breeding by the Federal Government, the State, and the Farmers in Minnesota . . 99
  Coöperative Horse-breeding 105
    The Company System of Horse-breeding . . . 106
Coöperative Crop Improvement 109
  Organization for Crop Improvement 111
  Corn-breeding Associations 112
    Plans of the Illinois Corn-breeders' Association . . 115

CHAPTER VII

COÖPERATION IN THE HANDLING, DISTRIBUTING, AND SALE OF FARM PRODUCTS, AS ILLUSTRATED IN GRAIN, DAIRY PRODUCTS, EGGS, AND COTTON (PAGE 120)

The Farmers' Coöperative Grain Elevators 122
  The Grain-distributing System 123
  The Method of selling the Grain 124
  Origin of the Farmers' Elevators 124
  The Plan of a Farmers' Elevator Company 128
  A Constitution and By-laws of a Farmers' Elevator Company 132
Coöperation in the Manufacture of Butter 135
  Organization of a Creamery 137

PAGE

- Organization Agreement 140
- The Status of the American Creamery 144
- The Centralizer Creameries 146
- A Business System for Coöperative Creameries . . . 148
- A Coöperative Dairy Federation in Minnesota . . . 152
- The Creamery as a Center for Rural Improvement . . 153

Coöperation in the Distribution and Sale of Milk . . . 153
- The Organization of Milk Producers 156
- The New York Dairymen's League 159

The Egg Business 161
- From the Country Merchant to the Packing-house . . 162

Some of the Remedies for the Egg Situation 164
- Changes in the Methods of the Small Egg-buyer . . . 165
- Buying Eggs by Quality, not by Count 167
- Refrigerated Receiving Stations 167
- Care of Eggs at the Source of Production 167

Marketing Eggs through the Creamery 168
- Advantages of this System of Handling Eggs . . . 173
- Conclusion on Handling of Eggs through Creamery . . 176

Coöperation in the Handling of Eggs in Other Countries . . 177

Coöperation in the Cotton Industry 182
- Conditions surrounding the Cotton Industry . . . 182
- The Cotton-distributing System 184
- The Dissatisfaction of the Cotton Farmer 185
- The Farmers' Union 185
  - The Charter 186
  - Principles of the Union 186
  - Membership in the Union 187
- Efforts of Growers to reduce the Acreage of Cotton . . 188
- The Maintenance of Prices by Organizations of Cotton Producers 190
- The Effect of the Farmers' Organization on the Price of Cotton 191
  - Warehouse Policy of Farmers' Union 193
- Economic Mistakes of the Cotton Growers 195

CHAPTER VIII

COÖPERATION IN THE HANDLING, DISTRIBUTING, AND SALE OF FRUIT (PAGE 197)

PAGE
The Fruit-distributing System 198
  Agencies of Distribution 199
    The Broker 199
    Fruit-distributing and Marketing Corporations . . 200
    The Jobber 201
    The Commission Merchant 201
    The Auction Company 202
    The Warehouseman 203
    The Retail Trade 204
Abuses in the Fruit Trade 206
The Handling of the Fruit Crop by Coöperative Associations . 212
  Bad Handling and the Fruit-rots 213
  Coöperation in the Harvesting of Fruit 215
  The Remedy for Decay in Citrus Fruits 216
  Coöperation in the Grading and Packing of Fruit . . 218
  Methods of insuring Uniformity in Grading and Packing . 220
  The Hood River Apple-growers' Union 221
    Constitution and By-laws 222
  The Central Packing-house 226
  The Pooling of Fruit 227
  Coöperative Cold-storage Plants 231
Coöperation in the Distribution and Sale of Fruit 234
  The Associated Methods of Selling Fruit 235
    A Small Association 236
    A Large Volume of Business 236
    Perishable Fruit 237
    Fruit with Long-keeping Qualities 238
The Citrus Fruits of California 239
  Selling the California Citrus-fruit Crop 241
  The California Fruit-growers' Exchange 241
    The Local Associations 242

PAGE
The District Exchange 243
The Central Exchange 243
Fixing a Price 246
Present Coöperative Methods of Citrus Distribution . . 247
The Coöperative Distribution and Sale of Other Farm Products . 248

CHAPTER IX

COÖPERATION IN THE PURCHASE OF SUPPLIES (PAGE 250)

The Organization of a Supply Company 250
Method of selling Supplies to the Members 252
A Fruit-growers' Supply Company 254

CHAPTER X

COOPERATION IN IRRIGATION (PAGE 258)

Progress of Coöperative Irrigation Enterprises 259
Methods of Organizing, Financing, and Operating Water Companies in Southern California 261

CHAPTER XI

RURAL CREDIT (PAGE 271)

National Interest in Rural Credit 272
Coöperative Credit Unions in the United States 274
The Jewish Credit Unions 274
The Cost of Credit to the American Farmer 277
The Individual Credit System 278
The Crop Lien 279
The Store Credit System 280
Bank Credit 282
The Need of a Better Rural Credit System 283
The Raiffeisen Banks 286
Organization and Management 287

PAGE
The Working Capital 287
The Loaning of Mone 288
The Federation of Raiffeisen Banks 289
The Schulze-Delitzsch Banks 290
The Working Capital 291
The Landschaften 291
The New Landschaften 294

CHAPTER XII

THE RURAL TELEPHONE (Page 299)

CHAPTER XIII

MUTUAL INSURANCE (Page 308)

A Plan for a Mutual Insurance Company 309
The Strength of the Mutual Insurance Associations . . . 311
State Mutual Associations 313

BIBLIOGRAPHY (Page 317)

General References 322
Cow Testing and Breeding 324
Creameries 324
Dairying 324

LIST OF ILLUSTRATIONS

Plate I. Packing-houses for Oranges . . . *Frontispiece*
A Modern Orange Packing-house.
An Orange Packing-house. Riverside, California.

FACING PAGE

Plate II. Orange Packing-house. Pasadena, California . 20
Plate III. Interior of Orange Packing-house. California . 40
Plate IV. Orange Packing-house and Equipment . . . 60
Orange Packing-house. Redlands, California.
Orange Grading-table and Sizing-machine.
Plate V. Interior of Orange Packing-house. Showing Sizing-machines 80
Plate VI. Electrical Orange Weighing-machine . . . 100
Plate VII. Types of Citrus Fruit Packing-houses . . . 120
Lemon and Orange Packing-house. Riverside, California.
Lemon Packing-house. Upland, California.
Plate VIII. Lemon Packing-house. Santa Paula, California . 140
Plate IX. Lemon Washing-machines 160
Plate X. Curing-tents for Lemons 180
Lemon Curing-tents, Showing Fruit Stored in Boxes.
Lemon Curing-tents, Showing Fruit Stacked in Trays.
Plate XI. Lemon Grading and Packing 200
Plate XII. Trucks for Use in Citrus Fruit Packing-houses . 220
Trucks Used in Movement of a Stack of Lemon Trays.
Plate XIII. Oranges Exposed for Sale at Auction. New York . 240
Plate XIV. Buyers Examining Citrus Fruit at Auction. New York 260
Plate XV. Coöperative Creamery. Hutchinson, Minnesota . 280
Plate XVI. Farmers' Coöperative Grain Elevators . . . 300

COÖPERATION IN AGRICULTURE

CHAPTER I

CHANGES IN INDUSTRIAL METHODS

In the last few decades, the industrial horizon of this country has been rapidly widening. Fifty years ago, the outlook of the American was bounded by his home and his community; his capital was small, his business interests were equally limited. But, during the period of the Civil War, mechanical invention was greatly stimulated and this was correlated with rapid progress in manufacturing and in foreign and domestic commerce. The telegraph, the telephone, the steamship, the modern locomotive, together with the Bessemer steel rail and the wireless telegraph, have displaced the personal messenger and the stage-coach and the sailing vessel, and have brought the whole world into instant communication.

The last generation has been primarily the age of the inventor, and not only of mechanical appliances, but of business methods as well. Combinations in all kinds of business have been formed, capital has been concentrated around gigantic undertakings, various systems of credit have been developed, and instruments of business devised to extend the influence and power of capital and of those who control it. These changes have been accompanied by equally striking modifications in the developing of the industries themselves. In the earlier period, the individual was self-sufficing. He lived and supported his family on the products of his labor. Then, as communication was extended, social life and the industrial system became more complex, competition more acute, and individuals joined successively, until prevented in some cases by the courts, in partnerships, joint-stock companies, industrial pools, trusts, holding companies and mergers, each combination forming a system under which it was supposed at that time the evolution of industrial pursuits could best proceed. At the present time, modern industry is completely dominated by large aggregations of capital. Competition is being gradually suppressed and business thoroughly organized and equipped through the concentration of capital under a growing legal regulation for its development and protection. In consequence, the problems arising out of the concentration of capital and the relation it should bear to competitors, to the state, and to the individual have become the leading questions of public policy. Under these conditions, the individual holds a new relationship to business and to society. Instead of living on the product of his labor as he formerly did, he lives on its profits. In place of transacting business man to man as his father did before him, he has become a more or less important part of the scheme of modern industrialism. He is no longer isolated. He is a link in the modern industrial and social chain with a corresponding influence and responsibility.

The changes which have been noted have taken place more rapidly in the secondary industries such as lumbering, transportation, and ordinary commercial pursuits than in primary industries which, like agriculture, depend more upon the labor of the individual than upon the organization and arts of man. Capital has not been concentrated in agriculture; it has instead accumulated in the towns and cities, where it has organized and federated itself into trade and with legislation to develop to the highest extent its own interests.

CHANGES IN LABOR METHODS

These changes have affected the laboring man as vitally as they have the capitalistic interests. The laborer cannot deal as an individual with organized capital and adequately protect himself, for under present industrial conditions, the barrier between his employer and himself is almost insurmountable. The capitalization of industry, therefore, has forced the laboring men to organize into labor unions, trades unions, and industrial unions, and to amalgamate or federate these separate units into larger central organizations, the purpose of which is to protect the interests of the members in dealing with their employers, to develop favorable labor legislation, to protect themselves against unjust laws, and to bring about a relationship between themselves, their employers, and society which will enable them and their families to share more fairly in the general prosperity to which their labor contributes. Like the concentration of capital, the organization of labor has almost eliminated free competition from its ranks and has been carried to a point where its relations to capital and to society have become a grave question of public policy.

READJUSTMENT IN AGRICULTURE HAS BEEN SLOW

The American farmer has adjusted himself more slowly to these industrial and social changes than either capital or labor. The reasons for this are partly inherent in the man who works on the land and partly in agriculture itself. The farmer is both a capitalist and a laborer and usually not a specialist in either. His capital is comparatively small. He is seldom skilled in the art of dealing with men or with modern industrial methods; he is not primarily a business man. He is more or less isolated. Compare him with the capitalist or the laborer and it will be seen that his vocation makes him more self-dependent than either. His daily routine centers around his family and the upbuilding of the home, rather than around the operations of other people or the industrializing of his farming operations. He is naturally conservative. The average individual farmer who is able and intelligent can succeed at all times without concerted action with other farmers, while the success of the individual laborer or the small capitalist in later days has been more difficult of attainment unless strengthened by thorough organization and the federation of similar interests.

INDUSTRIAL METHODS DIFFICULT TO APPLY TO AGRICULTURE

The average farmers are not even specialists in farming. They produce a variety of general crops, each having to be handled and marketed through different agencies. The supplies which they use are variable and are secured from different sources. It is only when they become specialists in a crop in which a large community is interested, like apples, oranges, tobacco, potatoes, or cotton, and have to develop special facilities for the handling and distribution of the crop, that a group of farmers have a common purpose comparable to the aims of a large manufacturer or to those of a trade or industrial union. Under these conditions, the farmers do have common problems to meet. They are confronted with similar questions of public policy, they purchase similar supplies, they seek similar markets, they have to face the same questions of production, of transportation, of distribution, and of sale. They are thereby placed in a position where their business lends itself to organization in order that methods may be improved, production cheapened, and that there may be brought about a better handling, distribution, and marketing of their crops and an improvement in their relations with other industries. It is, therefore, a difficult matter to apply to agriculture in general such business methods as have been developed in the secondary industries, or such as have contributed to the progress of the American laborer. It will be shown in later chapters that the methods of organizing capital and labor are not always adapted to the organization of rural problems and that the progress of the American farmer, in so far as it springs from the development of better business methods, must follow the adoption of practices that can be applied to the business management of the farm and to the organization of agricultural industries.

THE INDEPENDENCE OF THE FARMER

There are conditions among farmers other than those already mentioned that make the organization of their economic relationships difficult of accomplishment, not the least of which is the independence of the farmer himself. For generations, the tiller of the soil was self-sufficing and was bred and trained to depend on his own efforts. As a result of his heredity, his experience, his environment, and of his necessities, he is slow to delegate authority over his interest to any one. Dealing with complicated economic problems or with men has not been a part of his inheritance or of his experience, and, not being skilled in these arts, he underestimates the grade of ability needed to manage a business agricultural organization with which he may become identified, nor is he inclined to coöperate with others in solving common problems. He is likely to be suspicious of the business dealings of his neighbors. In the past, these difficulties have prevented the formation of many agricultural associations and have wrecked others that have been formed; though these conditions are gradually improving as agriculture becomes more specialized and commercialized, as the farmer becomes more experienced in business matters, and as the social and economic relations of the farmer grow more complex.

PROSPERITY OF THE AMERICAN FARMER

As a class, the American farmers have been very prosperous in the last twenty years. They have been reaping the rewards of better farming, and of a prosperity that has been general. As Professor Bailey says in "The State and the Farmer," good farmers are better off to-day than they ever were before. The prosperity has not always been uniformly distributed, either geographically or among the farming industries, but on the whole American agriculture has moved steadily forward, helped to a better understanding of its problems by the state and federal governments, protected by laws that give the farmer a fairer chance in dealing with organized capital, and stimulated by a variety of forces that have been working on the whole group of questions, agricultural, economic, political, social, and moral, which have come to be known as the rural problem. Under these conditions, the effective organization of farming or of agricultural industries has been well-nigh impossible. To persist, an agricultural organization must be the child of necessity and must crystallize around a vital economic question. It must be primarily an organization for industrial purposes, not a society of altruistic idealists formed solely on the principles of universal brotherhood. Its reasons for being must be deep-rooted in the necessity of improving and cheapening cultural methods, of developing better business, of improving the systems of handling, distributing, and of selling the products of the farm, and of strengthening its relationships with society as a whole. The desirable ideals of mutual helpfulness are more quickly reached, even if indirectly, during the development of the practical business organization. They have a vital force behind them and an influence on rural development such as is seldom attained in farmers' organizations formed for other purposes.

THE ECONOMIC LOSS IN RURAL EFFICIENCY

Notwithstanding the prosperous condition of agriculture, the fact remains that a tremendous loss in rural efficiency results from the lack of organization among farmers. The tiller of the soil is still meeting single-handed the problems that confront him. As an individual, he is endeavoring to deal with large public policy questions. He has not an even chance in handling that part of his business which lies outside the production of his crops. He purchases supplies in small quantities under an expensive and objectionable credit system. Everything he buys — food, wire, nails, twine, fertilizer, transportation, the telephone — is purchased from organized capital, often operating as an unregulated, predatory monopoly. Everything he sells — cattle, milk, wheat, poultry, eggs, fruit — is sold to organizations of capital, which also may operate as a predatory combination; or he may consign his produce to middlemen who, as dealers in the same products, are competitors of the farmers; to speculators in farm products, or to commission merchants whose operations as semi-public agents are generally entirely unregulated.

These remarks are not intended as a general indictment of the agencies which handle the products of the farm. It is a statement of a part of the rural problem which has been a vital social and economic issue in more or less acute form ever since it has been necessary to distribute the surplus of the farm to the consumers in town and cities. It is essential to the prosperity of American agriculture and to the welfare of the country that the distribution of farm products shall be done by agencies that specialize and equip themselves to perform this particular service. Any other system would lead to an unequal distribution of products and to economic chaos. The distributing agencies have usually not been organized by the producers themselves. They are composed of individuals, firms, or corporations who assume the risks of distributing the surplus supplies of the farm and who bridge the stream between the producer and the consumer. They are the local dealers, the transportation agencies which carry the products to the towns and cities, the brokers, the commission men, jobbers, auction companies, warehousemen, and the retailers, peddlers, and storekeepers who sell the produce to the consumer. As long as these agencies distribute the farm crops uniformly throughout the season at a reasonable cost considering the risks and the investment in the distributing facilities, and as long as they handle their business so that there is an equitable sharing in the profits, they are economically desirable from every point of view. The average farmer is not often in a position to distribute his own crops directly to the consumer. He has neither the capital to assume the risk, nor the knowledge requisite to develop a far-reaching mercantile agency, which requires large amounts of capital and a highly specialized organization. When he steps outside of his sphere as a producer, the average farmer does not often succeed except in the special agricultural industries which have been developed by men of unusual experience and ability. But when the farmer stands by himself in dealing with all of the agencies of distribution, he is at a distinct disadvantage in bargaining and in protecting himself against aggression. The experience of the present time shows that these agencies, when left unchecked, often become predatory and exploit both the producer and the consumer at the expense of the legitimate share in the nations' prosperity to which each is entitled. Under these conditions, the economic loss to agriculture retards the best development of country life.

DISSATISFACTION AMONG THE FARMERS

The producers are not unmindful of the position in which the organization of all kinds of industry has placed them. The adjustment between the producer, the transportation agencies, the many kinds of middlemen and the consumers is a subject of endless conflict and is a leading feature of the high cost of living and of other present-day problems. Through all the adjustment of the past, there has appeared a rural discontent decreasing or increasing simultaneously with the prosperity of the country. There has been a deep-seated conviction among the farmers that in the development of our modern industrial methods, the agricultural industries have had their efficiency impaired, that the systems of distributing farm crops as well as the sale of farmers' supplies are so handled that the individual farmer who acts alone pays the highest price for what he purchases and receives the lowest price for what he sells; while the distributing agencies, the railroads, the middlemen, and the retailers receive a maximum return on their labor and capital, or at least have organized the distributing system in such a complicated and extravagant way that the producer is prevented from sharing in the general prosperity to the extent that he feels his capital and labor have contributed.

EFFORTS TOWARDS ORGANIZATION

This conviction on the part of the farmer has been a source of endless controversy in the past and is now an acute public question. It has crystallized from time to time in different efforts to regulate by law some of the injustices from which the producer thinks he suffers. Soon after the Civil War, it took the form of a widespread agitation, especially in the Mississippi Valley, against the granting of rebates and the charging of extortionate discriminating transportation rates. In one form or another, this agitation has continued to the present time. It has been a leading factor in the passage of the present interstate commerce laws and in railroad legislation in the states, in the Farmers' Alliance Movement, the Populist Movement, in the Granger laws in the West and Middle West, in legislation to regulate public service and private corporations, in the recent tariff discussions, in the consideration of the high cost of living, in numberless state and federal investigations, and in various political campaigns. The farmers have always been ready to invoke the law to save themselves from the fate of modern conditions. They have endeavored to protect themselves from the abuses of the time by seeking the protection of governmental authority, rather than through the organization of their interests for better business methods and for the mutual safeguarding and development of their interests. For years, the rural classes have felt that there is too great a difference between the price which the producer receives for his product and that which the consumer pays. It has been shown by Secretary Wilson [1] that when the consumer buys food for a dollar, the producer receives about fifty cents, the other half dollar representing the costs and profits of distribution. This enormous addition to the cost of farm products, equaling the total cost of production plus the farmer's profit, is the price which the nation pays to the present agencies of distribution.

Since the beginning of commercial agriculture, there has been an agitation against the abuses of the distributing system. Sometimes corrective legislation has resulted, again it has been followed by the formation of associations of farmers through which supplies may be purchased or the crops distributed and marketed. Such efforts of the rural classes to correct the injustices which they have had to face have been continuous but not systematically directed nor organized. The Order of the Patrons of Husbandry, formed in 1867, the Agricultural Congress in 1870, the Farmers' National Congress in 1880, the Farmers' Alliances about 1875, the Brothers of Freedom formed in the South in 1882, the Farmers' Union, the Agricultural Wheel, the Farmers' Mutual Benefit Association, the Western Alliance, the Patrons of Industry, including both laborers and farmers, the New England League, the National Farmers' League, the Citizens' Alliance, and finally the People's party formed between 1880 and 1892 were organized to bring about better rural economic conditions by influencing legislation and to regulate the industries with which agriculture comes in contact. An excellent presentation of this phase of rural activity has been made by Dr. Coulter.[1]

---

[1] Report of the Secretary of Agriculture, 1911.

NEED OF BETTER BUSINESS AND BETTER FARMING

The things most needed to bring about a better agricultural condition, as pointed out by President Roosevelt in connection with the Country Life Commission, are better business methods, better farming, and better living. The solutions of these questions depend on the farmer himself, aided by state and federal legislation. Their attainment means a further readjustment of the activities of the farmer to present social and industrial conditions. It means that rural methods of thought, rural education, and the business of the farmer must be slowly reorganized so that agriculture will not suffer unduly in its contact with the organized industries. It means that the purchase of the things used on the farm, the distribution and the sale of farm crops, and the handling of rural public policy questions must be organized on principles similar to those that have contributed to the present high state of efficiency of capital and labor. It means that the farmer must give more attention to his relations to the community, that farmers must work together, that their common interests must be united in a force strong enough to bring a healthy constructive influence into the upbuilding of a better country life and sufficiently powerful to stand on the same level with every interest with which it comes in contact.

It will never be possible, nor would it be desirable, to industrialize agriculture to the extent that the secondary industries have been industrialized. The fundamental aim of the farm, as ably emphasized by Dr. Carver in his "Principles of Rural Social Life," is to establish an estate where a vigorous family can be developed and perpetuated. The farm is not primarily a money-making unit. It must furnish an income sufficient to enable the family to enjoy a social life and to have enough for intellectual and æsthetic pleasure, but the operations of the farm and the business connected with it must be centered around and be made a part of the family development. Any movement that through over-commercialization of the farm weakens the building of the home as the fundamental aim is unsound and in the end will prove a loss to the strength and to the best traditions of country life.

---

[1] "Organization among the Farmers of the United States," J. L. Coulter, *Yale Review*, 1909.

How far then can the farmer go in organizing agriculture along modern industrial lines? To what extent does agriculture lend itself to business organization? What are the principles of organization best suited to agricultural industries? Which are the agricultural industries that are capable of organization? What are the facts that have caused some of the agricultural organizations to succeed, and what are the rocks on which most of them in the past have been wrecked? How can the methods of marketing, the problems of coöperation, and rural public policy questions be handled in relation to the farmers as a class? These are some of the questions that the farmers all over the country are asking at the present time. They are problems which students of rural economics are considering, which public men are discussing widely, and which agitators of the agricultural class are endeavoring to answer in their efforts to organize the farmers for class purposes.

ORGANIZATION METHODS STILL EXPERIMENTAL

To any one who has had experience in agricultural organizations of the business type, it is clear that the whole question of rural economic organization is still in the experimental stage. There have been thousands of business organizations formed by farmers in the past to purchase supplies, to handle farm crops, to convert them into manufactured products, to distribute and sell them, and to bring about a better rural condition generally. Many of these associations are being formed at the present time, and there is every indication that American agriculture is just now entering an unusually active period of industrial and social organization. Few of these organizations have been successful, and it is probably not overstating the case to say that still fewer have been founded on principles which if generally adopted would help in the solution of the rural economic and social problem. It is generally true that the so-called farmers' business organizations have not been formed primarily to improve the industrial relations of the farmer. They have usually combined political questions, social and legislative problems, and business enterprise. Many of them have been formed by impractical enthusiasts with high motives but with little business experience, desiring to reform every one except themselves, to wage war on their neighbors who do not affiliate, to fight every competitor, and to found the organization on enthusiasm, altruism, and general discontent. It is a common fault that they have aimed too high to be useful. Many of them have been formed ahead of their time through the efforts of opportunists when there was no real call for organization or when the farmers were too prosperous to hold together. Many have been managed by incompetent local men who have been unsuccessful in business or who have been selected by the farmers because of evidence of local leadership rather than for business qualities, and, finally, the great majority of the organizations have been managed by totally incompetent, low-salaried men because the farmers have not realized that a business organization to succeed depends primarily on a manager possessing a high order of business and organizing ability. Such organizations have had a short, violent existence and have died as every business undertaking must when born prematurely or when placed in the hands of inexperienced, incompetent leaders.

It would be unfair to overlook the splendid efforts of many of those who, in the past, have tried to organize the farmers under a better business system. Many of these enthusiastic men have set forth principles that underlie the most successful organizations of the present time. They may have been in advance of the necessity for organizing. They may have been ahead of the economic and social ideals of the people whose condition they tried to improve. Their ideas may have been crude and impractical, but they scattered seeds among the rural classes which have been growing and developing more perfectly and which are now reaching the harvest time. Every movement that seeks to reorganize and to establish new industrial systems must grow through gradual evolution. Every new movement must have its enthusiasts who hitch their wagons to the stars but who leave the working out of details to a future generation.

In the following chapters, an effort is made to point out the principles on which successful industrial organization among farmers is likely to rest, the legal difficulties of organization, the principles of federation, the obstacles in the way of organization, and the agricultural industries in which business organization is most likely to succeed.

CHAPTER II

FUNDAMENTALS IN COÖPERATION

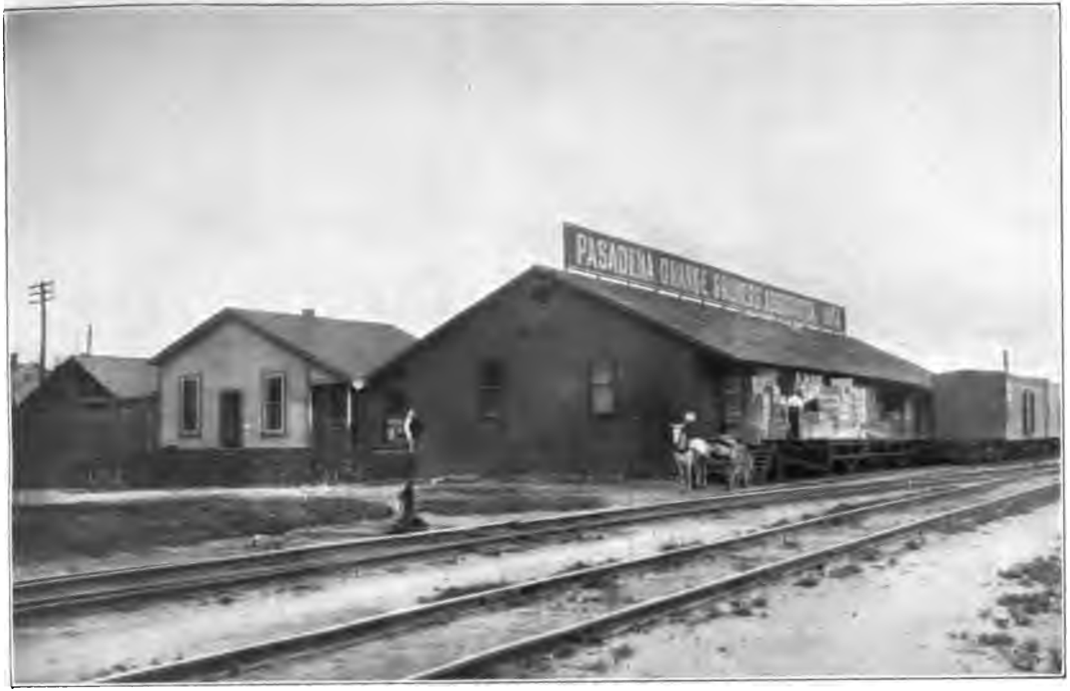
UNDER present economic conditions in America, it is a fundamental principle that a successful industrial organization among farmers must be founded on a special industry, such as cotton, tobacco, milk, butter, poultry, small fruits, truck crops, peaches, apples, or citrus fruits. Farmers who produce general farm crops for which there is a steady demand and a ready market do not always have a common motive for holding together, especially if they are fairly prosperous. If they can sell their produce without difficulty, or do not have to develop special markets or marketing systems, they may be satisfied with conditions as they are. Up to the present time, it has not been possible for American farmers who grow a number of general farm crops to organize for business purposes except in rare instances to supply local markets. The marketing of each product follows well-established lines and these are firmly intrenched in the hands of established marketing agencies, with which few organization managers have sufficient experience or skill to compete.

On the other hand, the special industries like those mentioned in the preceding paragraph have to meet special problems of production, of crop handling, and of marketing. In a special industry, the risk is greater, the stake is larger, the attraction is for men with more than the average resourcefulness and initiative. These men have a common purpose, and they are naturally better fitted to meet it. In a dairy section, the farmers are interested in the testing of cows, in the manufacture of cheese, in the sale of milk, in the purchase of feed, or in the establishment and maintenance of a creamery. In an apple section, the growers are interested in the standardization of grades, in uniform packing, in a central packing-house or storage plant, in the purchase of supplies for spraying, for the packing of the fruit or for other purposes. In the citrus industry, growers in California have organized to purchase or manufacture the supplies used in the groves and packing-houses, to build central plants where the fruit of the growers is assembled for packing, to develop markets and to equalize and effect economies in distribution, to reduce the number of middlemen, to handle questions of public policy relating to the industry and systematically to upbuild the industry in other ways. Potato growers, cotton planters, cranberry growers, or other special producers have common problems confronting them, which they are naturally fitted to grasp collectively but which the individual producer would be unable to meet successfully alone.

THE UNIT MUST LIE IN A RESTRICTED AREA

It is fundamental that the unit of each agricultural industrial organization formed to distribute and sell farm crops or for other business purposes must lie in a comparatively small area. The members must be well acquainted with each other, their aims must be similar, and they must grow products of similar quality and character if they are to succeed when associated with one another. It is equally important that the membership be a stable one and that the farm lands are not frequently changing hands, a condition which often operates against the success of the coöperative movement in the newer sections of the country. If the products vary widely on account of differences in the soil, in climate, or other environmental conditions, the grades are not uniform and the producers cannot easily be held in a common organization. The efforts that are frequently made to have a single organization cover a wide territory are, therefore, not likely to succeed. It is desirable from every point of view that each rural community and each individual should retain its individuality to the greatest possible extent, that it should not have local pride and ambition stifled by too general a mixture with other sections, and that it should be encouraged to build up a local reputation for its products that distinguishes it from other communities. The vitality of the country, as Professor Bailey has forcefully pointed out, depends on local and individual initiative, and any effort towards organization that fails to recognize this principle is fundamentally unsound. There have been many attempts to amalgamate the growers of a single crop in different sections into one large organization just as the Knights of Labor formerly attempted to amalgamate different laboring men into one central organization. None of these efforts have succeeded. The apple-growers of one section may be encouraged to organize to prepare the fruit for market and for other purposes that are local in character; the growers of another valley a few miles distant where the varieties are similar but the style and

PLATE II. — Orange Packing-house. Pasadena, California. Chapters IV, VIII.



finish of the fruit different should be led to form a local organization for the same purpose. For the same reason, the growers of every other local section or in different parts of the same section where the fruit is different in character should organize and develop their own local business problems. Later, as a matter of economy and business efficiency, these different associations may federate and organize a central body to act as an agent in marketing the fruit of each association or to furnish the facilities for marketing, to purchase the supplies used by all, and to handle these problems that are common to all alike. But each association should preserve its local character by selling its product under a brand that is the exclusive property of that association, thereby holding and developing the local pride and reputation of that section.

AGRICULTURAL ORGANIZATION MUST BE BORN OF NECESSITY

The reason for an industrial organization among farmers must lie in some vital service which it is expected to perform, if it is to have virility enough to live in the face of the competition to which every new farmers' organization is subjected. A farmers' business association cannot be formed without competing with agencies already established. If it is a serious business undertaking, the forces of competition will be directed towards crushing it; it will be viciously attacked by its competitors; insidious suspicions of all kinds which are apt to influence the average farmer will be circulated regarding it; it may be crippled by the railroads through quiet discrimination in the furnishing of cars or in the extending of transportation facilities to its competitors, or by some other influence over which its competitors have control; and it is likely to fail at the start in the face of the fire which it will have to meet unless it is founded on the bed rock of necessity. Among farmers, who under existing conditions are already prosperous, the need of business organization is not usually felt, even though the costs of marketing and the extravagant profits of the middlemen or the railroads might be greatly reduced. They must feel the pressure of need before they can launch a successful business association. When the farmers buy their supplies at reasonable prices, and sell their products readily at a good profit, they do not feel the necessity of organization. It has been the experience of the past that they must feel the need of getting together to meet a crisis in their affairs, and the realization of the need must spring from within and not be forced on them from without by the enthusiasm of some opportunist who seeks to unite the farmers on the principle that organization is a good thing. American agriculture is strewn with the wrecks of associations that were the outcome of high motives and impractical enthusiasm. It will continue to be filled with derelict associations as long as they are formed by professional organizers, by middlemen who seek to control the products of a community, or by impractical farmers who affiliate to fight some evil but who fail to form on a broad, constructive basis for the upbuilding of the business side of their industry. To unite successfully, a group of farmers in the past have had to feel the effect of hard times, or of oppression by the railroads, a helplessness on account of a combination among those who buy their products, or of those from whom they purchase supplies. They must have had big obstacles to overcome, such as long distances to transport their products, inadequate transportation facilities, unreasonable freight rates, a perishable product to market, or expensive operating costs. In short, if an organization is to be successful, the investment of the farmer must be threatened by existing social and economic conditions before he can overcome his individualism sufficiently and can develop a fraternal spirit strong enough to pull with his neighbors in coöperative team work. This is especially true in the older parts of the country where diversified farming is more largely practiced. If he is already successful, he has been slow to embark on the complicated sea of coöperative business. The point of view of the farmer is being gradually readjusted by scientific education and experience, and in time he will unite with his neighbors to bring about better farming, better business methods, and a richer country life. Then it will be possible to inaugurate a new order of industrial agriculture, and a new race of farmers will grow up like those who are settling in the foothills and valleys of the newer western states. Intelligent coöperation among farmers may accomplish all of these things and make for progress in a community such as no unorganized agricultural industry can foster. But successful coöperation develops through a gradual evolution, the mainspring of which, at least in its childhood, must be grim necessity. If it is born prematurely, it starts with a weak constitution and expires in the first encounter with adversity. It must be formed by farmers who realize that agriculture is passing through a slow evolution in its adjustment to modern social and economic changes, and that the business of the farmer must be handled collectively rather than individually if the farmer is to share equitably in the increasing prosperity which the better organization of all kinds of industry has brought to the country.

THE ORGANIZATION SHOULD BE COÖPERATIVE IN FORM

There are two systems under which a farmers' business coöperative association may be formed. It may be incorporated as a non-profit corporation where the laws of a state provide for corporations of this character; or it may be formed as a corporation for pecuniary profit with a limitation placed upon the rights of the stockholders and the methods of distributing the surplus earnings, the method of regulating the rights of the stockholders and the surplus earnings being defined by the statute, or the right to regulate them being conferred by the statute on the corporation through the by-laws of the association. If the association is formed as a corporation for pecuniary profit where state laws permit, the capital stock should receive but a limited rate of interest, usually not more than the customary interest rate, each stockholder should generally have only one vote with no proxies, or the votes may be proportional to the amount of product contributed by each member; no one stockholder should hold more than a small percentage of the stock without the consent of the corporation; and the net proceeds of the sales of products should be distributed *pro rata* on the products contributed or on the purchases of each member.

If formed as a corporation without pecuniary profit, stock certificates are not issued and membership is evidenced by a certificate of membership. In this case, each member usually has one vote or the voting power may be proportional to the product contributed, the customary interest may be paid on the capital invested in the corporation, and, after operating expenses, a reserve fund sufficiently large to meet debts and losses and a fund covering depreciation are set aside, the surplus is then distributed to the members in proportion to the amount of business transacted through the organization, either in the purchase of supplies, in proportion to the amount of produce contributed by each, or in proportion to other service rendered. In the non-profit corporation or in the corporation for profit, the stock or the membership should not be transferable except under rules legally defined by the corporation.

THE MEMBERSHIP IN A FARMERS' ORGANIZATION

A producers' organization should be composed exclusively of farmers who are acquainted and who have confidence in each other. If the organization includes those with whom he has business relations but who are not themselves producers, it is in danger of losing its distinctive coöperative features, and the duration of its existence is problematical. Many farmers' associations are formed through the efforts of local bankers or merchants, or by outside jobbers or commission merchants. Associations formed in this manner may be well organized and may be successfully operated for a time if the policies and management lie in the hands of the producers. In some of the fruit-growing sections, a broker desiring a position as manager has organized the growers. An established commission firm has accomplished the same end because it could more readily handle a large business through one channel than with each individual farmer. On the other hand, they are often formed by local business men who have no desire to share in the immediate profits and whose sole desire is to promote the coöperative method in order to bring about a better industrial condition among the rural classes. Organizations that are formed in this way may help a local situation temporarily, but it is unwise for a group of farmers to place themselves in a position in which a marketing, financial, or any other agency can determine its policy or influence or control its management. It has been the experience of the successful farmers' business organizations that its policy and management, the voting power, and the direction of its business operations must rest exclusively in the hands of the producers, otherwise the organization is likely to pass into the control of those whose interest lies in the dividends on the capital stock, rather than in a desire to improve the farmer's condition by the distribution and sale of crops or the purchase of supplies along coöperative lines.

It is therefore fundamental that the control of the membership in a farmers' organization should be fixed by rules legally laid down by the directors of the organization rather than rest upon the mood of the individual members or on rules that have no legal basis. Membership in a non-stock organization should be evidenced by a certificate of membership; in a stock corporation, by a stock certificate. Membership in a non-stock corporation should not be assignable to any other person, nor should the purchaser or any one else who succeeds to the property rights of a member be entitled to membership except under rules legally fixed by the directors of the association. It has often happened that the transfer of stock from a producer to another person, an act which cannot be prevented when the association is formed as an ordinary stock corporation for pecuniary profit, has resulted in the transfer of the control of the organization to those who may be opposed to the continuance of the organization, or the organization may be controlled by former stockholders who have sold their land and are no longer engaged in agriculture. These difficulties and methods of avoiding them will be more fully set forth in a subsequent chapter.

THE VOTING POWER OF MEMBERS

As a general principle, the most desirable form of organization is the industrial democracy in which each member has an equal voice in the management and shares proportionally in the benefits and risks with every other member. This type of organization, like the different divisions of American government, is founded on equality in the rights and responsibilities of membership. The basis of the organization is the individual member, a number of whom have joined together to accomplish a mutually common purpose. This is very different from the principle of the stock corporation formed for pecuniary profit. In the latter, the responsibility and voting power and profits of the member are proportional to the amount of capital invested by each. In the stock corporation, capital is the basis of the organization and of its control.

In the coöperative association, the controlling factor is men; in the other, money. The "one man, one vote" principle of organization is best suited when the interest of each member in the association is approximately equal to that of every other one. Under these conditions, each member contributes equally to the investment necessary for operation, each has an equal voice in the management of the business, and all share *pro rata* in the advantages and the risks. The object of the organization is to serve the members and to distribute the earnings on the basis of the member's business.

The "one man, one vote" principle, however, is not always adapted to industries in which the amount of the product contributed by the members varies widely. In this case, the voting power, property rights, and interests of its members may be unequal and the members may contribute to the investment in the proportion that the product of each member bears to the total product handled by the association, or in proportion to the acreage of each member. Under these conditions, the voting power, property rights, and interest of each member may be in proportion to such contribution, or in the proportion that the acreage of each member bears to the total acreage which contributes to the association, or proportionally in other ways. Among many earnest advocates of the coöperative method, the "one man, one vote" idea is held as a sacred fundamental principle to which there should be no exception. It is an application of ideal democratic principles to business transactions. This is the usual method in the foreign coöperative societies, and as a general principle, it should usually be adopted in America. This limitation has been incorporated in the laws of some of the states which provide for the formation of coöperative associations, notably in Nebraska, Minnesota, and Wisconsin. But experience in some of the most successful American non-profit coöperative business associations, like the organizations of citrus fruit-growers in California in which the property interests of the growers are widely variable, has shown that the grower who markets $100,000 worth of fruit through a coöperative association will not consent, nor should he be expected to stand on the same basis of responsibility in the management of the organization or in liability as a fellow grower who contributes not more than $5000 worth of fruit. Experience has shown also that the voting power of the members may be equal with a reservation that it may at any time be proportional to the product or acreage contributed, with a limit placed on the voting power of large producers, without weakening the fundamental principles that distinguish a coöperative non-profit corporation from an ordinary stock corporation formed for pecuniary profit.

THE MEMBERSHIP AGREEMENT

It is fundamental that the members of a farmers' coöperative organization be held together by a contract or agreement, or by a binding provision in the by-laws to be signed by every member. Voluntary membership is suicidal to a coöperative business organization. The success of the coöperative movement depends, in the final analysis, on the steadfastness and coöperation of the members. Their support must be in the nature of a strong conviction that the coöperative principle as a business system is right, and their faith and loyalty must be large enough to hold them together in the face of temporary adversity or of the insidious efforts of the opponents of the coöperative method to disrupt the system. Without this loyal support, a board of directors or a manager cannot succeed in the development of an efficient business organization. It is a fact that in many sections, many of the farmers have not shown loyalty to coöperative associations formed to distribute and sell their products. They have no interest in the general rural movement. They are willing to have their neighbors form organizations and assume all of the responsibilities connected with their development and maintenance. They prefer to sell their products to buyers whenever they can and to have a coöperative association in the neighborhood as a house of refuge through which their crops can be sold whenever they are unable to dispose of them to better advantage in any other way. They know that a coöperative association may prevent the buyers from forcing the producer to sell his crop at an unreasonably low price, but they are interested in it only as a means of getting more money for their crops from year to year. There are many other well-meaning farmers who believe in the coöperative movement as a means of giving stability to the crop-marketing system. They do not antagonize it; in fact, they encourage it in every way and would give it direct support if its stability were in danger. But they will not identify themselves with it because they prefer to act independently while accepting all the advantages it confers on the industry with which they are connected.

As a business precaution, a contract or agreement between the association and its members is essential to the development of a stable coöperative enterprise. Unless otherwise provided, the agreement should give the association the exclusive right to handle the products of its members, or exclusively to supervise or execute or regulate such functions for the members as it is organized to perform. The idea of the coöperative organization should be broadly democratic. Each member should be allowed to exercise the fullest discretion regarding the production of his crops, and the handling of such questions as do not conflict with the fundamental principles of the organization. On the other hand, the association must know definitely what it is expected to do, including the volume of business it is expected to transact, and with that in view, it should have an agreement with its members setting forth in detail the relations and responsibilities existing between each member and the organization. The agreement or the provision in the by-laws should provide that an assessment be levied against every member in lieu of liquidated damages whenever its provisions are broken. The membership agreement is the foundation stone on which the stability of a farmers' coöperative business association is reared. Without it no association can hold its membership together when competing interests become active, nor can it attain the degree of stability that is essential to a business undertaking. Experience has shown that those associations are likely to fail that depend on the honor of the members alone to hold them together with no binding legal obligation in addition. In some of the California citrus fruit organizations, the membership agreement provides that twenty-five cents per package shall be assessed against every package of fruit sold outside of the association as liquidated damages sustained by the association which has incurred expenses to provide for the selling and marketing of the fruit. In some of the farmers' coöperative grain elevators, the agreements provide that the producer may market his crop outside of the association by paying to the association a commission of two per cent or more of the price received outside. The legality of such special requirements has been called into question in some of the courts when these requirements operate as a penalty rather than as a liquidation of damages. In a recent decision in Iowa affecting the right of a farmers' coöperative society to oblige all members selling hogs or produce to any other individual or company to pay into the treasury of the company five cents a hundredweight, the court permanently enjoined the association from enforcing such a rule. It held that the association must enter into the open market in seeking business the same as other concerns and that the enforcement of the rule as provided in its by-laws compelled any other firm doing business in the same territory to pay to it ten cents more per hundredweight than the farmers' association. It thereby acted as a restraint of trade.

A Citrus Fruit Membership Agreement, as an Illustration

The following is a copy of a uniform crop agreement between the members and many of the associations that are affiliated with the California Fruit Growers' Exchange. This organization represents six to eight thousand growers, who have formed more than one hundred local associations through which the fruit is prepared for shipment to be marketed through the agents provided by the central organization. This agreement shows some of the essential features that should be included in the contract between the members and the association in an organization formed for the distribution and sale of farm products. The contract may be a separate document or it may be incorporated in the by-laws of the organization.

UNIFORM CROP AGREEMENT

THIS AGREEMENT, Made the ______________ day of ______________ A.D. 191–, between the ______________________ Association, a corporation incorporated under the laws of the State of California, and having its principal place of business at ______________________ in said State, and affiliated with the ______________________, a corporation incorporated under said laws for the purpose of marketing California citrus fruits, the party of the first part, and the undersigned citrus fruit-growers of ______________________, said State, the parties of the second part.

WITNESSETH:

Sale and Delivery of Fruit.

1. That, for and in consideration of the sum of one dollar, the receipt of which is hereby acknowledged by each of the second parties, and of the covenants and agreements herein contained, each of the second parties hereby sells and conveys, and agrees to pick, haul, and deliver to the first party, at its packing-house at ______________, in said State, for the purpose of packing, selling, and marketing, all the citrus fruits now growing upon his land and premises, and all that, during the term of this agreement, may be grown upon his lands and premises, or any other lands or premises owned by him and situated in the County of ______________, said State, at such time or times, and from time to time, and in

such quantities, as the first party, or its agent, may direct.

Packing and Marketing.

2. The first party agrees to receive, pack, sell, and market all of said fruit whenever a market may be found for the same, which, in the judgment of the first party and in accordance with its rules and regulations, shall justify such selling and shipment.

Proceeds.

3. The first party agrees to pay to each of the second parties the amount received for his said fruit, less its regular charges for packing, shipping, selling, and marketing the same.

Withdrawal of Land.

4. If any of the second parties shall, in good faith, sell his said lands, or any part thereof, he shall be released from this agreement as to all lands sold and conveyed, upon giving notice in writing thereof to the first party.

Term of Agreement.

5. This agreement shall continue in full force and effect from the date hereof until November 1st of the year of the date hereof, and for a further term next thereafter of five (5) years.

Suspension of Agreement.

6. Any of the second parties to this agreement may be released therefrom and terminate and end the same as to him, by filling a written notice of his desire to be so released, with the party of the first part, during the first fifteen (15) days of August of any year during the term of this agreement.

By-laws.

7. The by-laws of the first party and the contract between the first party and its local exchange and the contract between such local exchange and the ______________ shall be parts of this agreement and shall be binding upon each of the second parties except in those particulars in which it is expressly herein stipulated to the contrary.

Rules and Regulations.

8. The packing, selling, and marketing of the said fruit shall be done in accordance with the rules and regulations of the first party now or hereafter adopted and observed by it.

9. Each of the second parties fully understands that the purpose, among others, of this agreement, is to maintain and to increase to its greatest efficiency the present coöperative fruit-selling and marketing agency known as the ————————, whose stockholders are the representatives of various subexchanges, and the stockholders of which said subexchanges are the representatives of the various and numerous fruit associations of the State of California, of which the first party is one; and that to accomplish this purpose it is necessary that each of the parties of the second part shall strictly and fully comply with and perform the stipulations of this agreement on his part, and therefore, each of the second parties expressly stipulates and agrees that he will not sell or otherwise dispose of his said fruit to any person or corporation other than to said first party, as herein provided; and that in case he shall fail, refuse, or delay to pick and deliver his said fruit to the first party, within five (5) days after demand therefor, the first party shall have the right, at its option, at any time or times thereafter, and from time to time, to enter into the possession of his said premises and to pick his said fruit, or any part thereof, and take the same to the packing-house of the first party, and pack, sell, and market the same, all at his cost and expense, which said cost and expense shall and may be retained by the first party out of any monies received from the sale of any of his fruit.

Purpose.

Possession.

10. The actual damages which will be sustained by the first party because of the failure or refusal of any of the second parties to pick and deliver his said fruit as herein provided, and the further detriment and injury to the first party because of the effect of said breach upon the ———————— and its efficiency, and the expenses to which the first

party will be put, and the damage caused by outlays incurred and to be incurred by it in providing means for selling and marketing the said fruit, are impossible now to estimate or fix, and, therefore, the same are estimated and agreed upon as twenty-five cents (25¢) for each box of fruit grown or sold, which sum shall be allowed in any action brought by the first party to recover damages for the breach of this agreement by any of the second parties, should the first party elect, as it may elect, to bring such action.

Liquidated Damages.

IN WITNESS WHEREOF, the said corporations have each hereunto caused its corporate name and seal to be affixed by its President and Secretary duly authorized by resolution of its Board of Directors, duly passed and adopted, and all other parties have hereunto signed their individual names and affixed their individual seals.

________________________Association.

By________________________

President.

By________________________

Secretary.

______________________________owning________acres.
______________________________owning________acres.

MANAGEMENT

The success of a coöperative organization depends on the loyalty and earnestness of the members and on the efficiency of the management. As usually handled, the powers of a coöperative association are vested in a board of directors who manage and control its affairs through officers or agents appointed by it and subject to its advice and direction. A coöperative business organization cannot be handled successfully by a board of directors. The commission form of government without a responsible leader cannot be applied to it. It requires a manager who is competent to assume the general direction of its business. Like any other successful manager, he must possess business ability of high order, sterling integrity, and tact and judgment in dealing with men and affairs. The manager selected may be a man of administrative experience, or he may be selected and developed from the membership. The latter policy is frequently followed in the formation of these associations. This, however, is often a dangerous experiment, and innumerable coöperative associations have been wrecked as a result of the inexperience and incompetence of the average producer who assumes the duties of a general business manager.

Difficulties in Management

A coöperative organization is more difficult to manage than an ordinary corporation. In the latter, the stockholders do not often take an active interest in its management because they are not experts in the business of the corporation. They select a manager and hold him responsible for the development and execution of their policies, but when a farmers' organization is formed, the farmer is an expert in its affairs to a greater or less extent and he may feel that he is capable of handling the organization, or, at least, of giving active advice regarding the details of its methods. This trait is a valuable asset in a farmers' organization provided the manager is big enough and broad enough and has sufficient skill to utilize it; and herein lies the vulnerable spot in the average farmers' coöperative business association. There are two extremes in the methods of managing a coöperative organization of farmers: one is the method in which the manager becomes an arbitrary dictator in developing and executing the policies of the association similar to the method in many stock corporations; in the other, the directors establish the policies and execute them through a clerical assistant. Either system is almost certain to fail in the end. Neither is founded on principles that are adapted to a farmers' coöperative organization.

Between these two extremes lies the successful method of management. The manager who succeeds is he who holds the confidence of the directors and the interest of the members, who utilizes the suggestions of the directors and of the members and who shapes them into a working policy, who acts on matters of policy only after the approval of the directors, and who, at the same time, takes the initiative in the development of a progressive, constructive business policy for the directors to adopt. On the other hand, the manager who fails to hold the confidence of the directors or the members, who becomes a dictator of the policies and thereby drifts away from the spirit of the organization, or who is merely a clerk to carry out the undeveloped business policies which a board of directors acting alone is likely to develop will invariably fail.

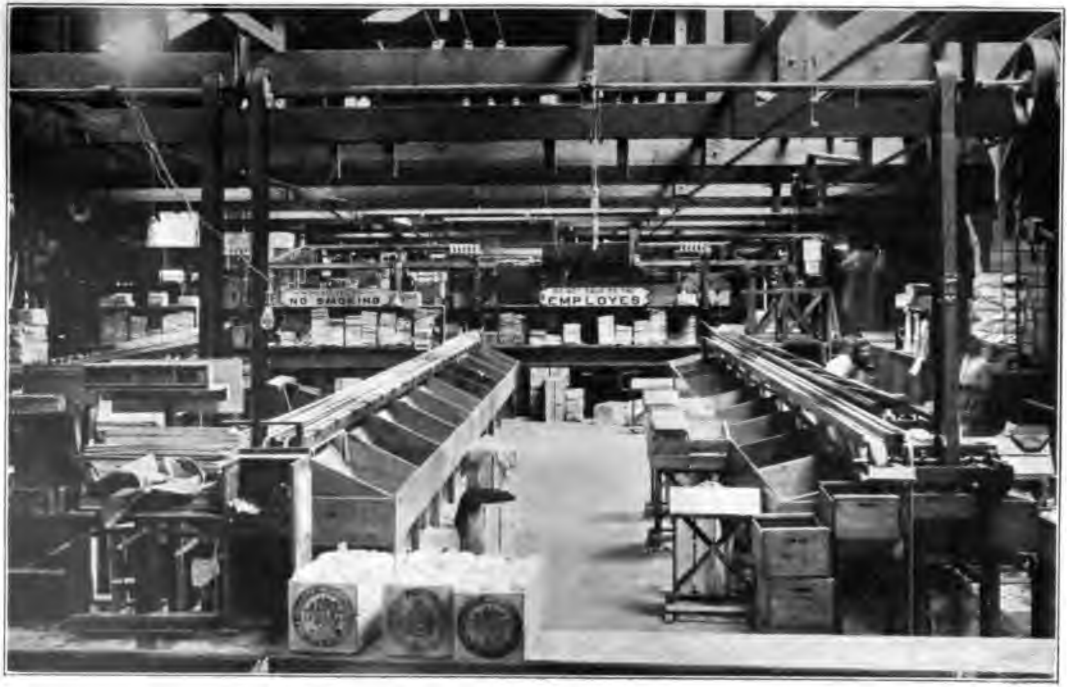
Again, from the standpoint of the association itself, no coöperative organization can succeed if the directors are unwilling to place its business management in the hands of a strong, aggressive, thoroughly experienced, well-paid man and to carry out all of its policies through him alone. Whenever a director or member assumes the duties of the manager either openly or by indirection, the association is bound to face a serious internal situation. Of all the different factors that have been contributory, no single factor, unless it is disloyalty of the members themselves or the meddling of members in the duties of management, has operated so strongly against the success of farmers' business associations as the low-salaried, inexperienced, incompetent managers selected by the directors to handle these organizations. This position is not a place to be filled by a popular local leader who has often failed in business, or who has been only moderately successful. There are many association managers of this type. They are "good fellows," but they often stand in the way of real progress in the coöperative movement because they have none of the elements of leadership or do not possess convictions of a kind that lead to the upbuilding of the coöperative method. The organization must meet on every hand the competition of organized capital. It has large questions confronting it. The influence of the manager, next to the loyalty of the members, exceeds all other influences, and the success of the undertaking depends upon his skill and ability in developing, with the directors and members, a constructive business policy that is able to meet these conditions as they arise.

CHAPTER III

LEGAL FEATURES OF COÖPERATIVE ORGANIZATIONS IN AGRICULTURE

A COÖPERATIVE organization is one that conducts its operations for the benefit of its members. The voting power of the members is equal or proportional to the amount of business transacted through the association. The distribution of its earnings is based upon the amount of business transacted for each member, upon the amount of property bought from or sold to the members, or in proportion to other service rendered by each member. Its operations are conducted at cost; all the surplus earnings are distributed *pro rata* to those who have used the facilities of the organization in the conduct of their business operations, after operating expenses, depreciation on property, a reserve, and the usual rate of interest on the capital invested in the property have been deducted. A coöperative organization differs fundamentally from the usual stock corporation formed for profit in that that capital invested in the latter is the basis of administration, control, and of the distribution of surplus earnings. In the former, the basis of control is the membership. The stock corporation for profit performs its function in order that the capital invested by the stockholders may earn a dividend. As organized in the United States, a coöpera-

PLATE III. — Interior of Orange Packing-house. California. Chapter VIII.



tive association may or may not have capital stock. If formed as a stock corporation for profit by farmers and managed under the principles of a stock corporation, it is not different from any other capital stock corporation. If, however, it is formed as a capital stock corporation, it may still be coöperative if the law under which it is incorporated defines the methods of voting, the transfer of stock, the limitation in membership, and the distribution of surplus earnings on coöperative principles, or if it permits the members through its charter and by-laws to manage its affairs along coöperative lines. In a coöperative organization formed as a capital stock corporation, the capital invested as already pointed out should earn the usual rate of interest, and after operating expenses, depreciation, and a reserve are deducted, the earnings are distributed wholly or in part in proportion to the business transacted through the corporation or in proportion to other service rendered by each member.

From the legal standpoint, there has been little attempt by the states to define a coöperative organization, nor is it permissible under the laws of many of the states to limit the rights of members or to define the distribution of the surplus earnings along the lines set forth in the preceding paragraphs. As a general rule, any organization formed by farmers is likely to be called coöperative, though it may be incorporated as a stock corporation for profit, as a partnership, or as a non-profit corporation without capital stock. In the absence of legal definition, it is therefore impossible to secure comprehensive data covering the extent of the so-called coöperative organizations in the United States.

THE DIFFICULTY OF ORGANIZING UNDER PRESENT LAWS

Under the corporation laws of most of the states, it is generally impossible to organize a business agricultural association on a non-profit coöperative basis. The method of handling an organization must conform to the laws of the state. They must be consistent with the federal statutes and with the articles of incorporation. The laws that govern an organization for pecuniary profit have been enacted primarily to meet the needs of capital, not those of agricultural non-profit corporations. The laws relating to non-profit corporations usually cover religious, fraternal, social, scientific, educational, benevolent, or charitable institutions, or other similar associations.

The laws governing the formation of membership corporations or partnerships are not adapted to the formation of agricultural non-profit coöperative organizations. The money contributed by each member to establish and maintain the business of these membership corporations or partnerships may be fixed by mutual agreement among the members. The money required for operating expenses in many of the farmers' organizations is raised by withholding certain percentages from the products marketed and not by assessment on the capital contributed by each or by proportional assessments of the members. These laws are therefore not adapted to the organization and management of associations formed on the coöperative plan.

In stock corporations formed for pecuniary profit, the voting power of the member is proportional to the number of shares held by each member, though in some states the legislatures have placed a limit on the number of votes that each stockholder may cast. This is a right fixed by the statute. The right to sell and transfer the stock is incident to the ownership. It also is a statutory right and not subject to the control of the corporation, though the corporation may have the first option to buy the stock whenever a member desires to sell. The ordinary corporation law is therefore inadequate to meet the requirements of the farmers' coöperative organization. In these associations, it may be desirable to make the voting power of members equal, or proportional to the product contributed, or to the acreage, or to the service rendered by each member. The membership in these associations is confined exclusively to producers and should not be transferable except under rules legally provided by the associations. These restrictions are non-enforceable under the usual stock corporation laws.

Many of the so-called farmers' coöperative organizations have been formed under the stock corporation laws of the different states. The control of the membership therefore becomes impossible unless legally provided otherwise, and there is no way in which a stockholder can be separated from the corporation when he withdraws. He may sell his farm and continue as a member until he sells his stock. He can dispose of it to any one who will purchase it, though many associations provide that the stock of a withdrawing member shall first be offered to the association, a provision which is of no value when the association is not financially able to buy the stock; or, if he retains it, he may become identified with a rival organization and still be entitled to know all about the business of the former organization, since the stockholder, as a general rule, has the right to inspect the books of the corporation, if it is done for a specified and proper purpose. As a result of the withdrawal of members through the sale of the farms or in other ways and the transfer of stock, the control of coöperative associations organized under the general corporation laws in different states has often passed into the hands of rivals in business and of non-producers. In most of the states, there is no legal way in which this result can be avoided when farmers' organizations are formed as stock corporations for pecuniary profit.

The organization formed for pecuniary profit may, on the other hand, inflict a hardship on the stockholder who is no longer a producer by assessing the stock, which assessment he would legally be required to pay, but the benefits of which he could not enjoy, because he would no longer market his product through the organization.

NEW LEGISLATION NEEDED

To meet the needs of the farmers' business coöperative organization, new legislation is needed in most of the states which will permit the formation of corporations under which business may be conducted on the coöperative plan. Laws of this kind have already been enacted in several of the states, notably, California, Wisconsin, Nebraska, and Minnesota. In England, the coöperative trading associations are organized under "The Industrial and Provident Societies' Act," and the coöperative credit societies under "The Friendly Societies' Act."

The Wisconsin Law

In Wisconsin, a law was passed in 1911, Chapter 368, Laws of 1911, which provides for the formation of "a coöperative association, society, company, or exchange, for the purpose of conducting agricultural, dairy, mercantile, mining, manufacturing, or mechanical business on the coöperative plan." It "may buy, sell, and deal in the product of any other coöperative company heretofore organized or hereafter organized" as a coöperative association. The law provides that "no stockholder in any such association shall own shares of a greater par value than one thousand dollars . . . or be entitled to more than one vote." It provides that the directors shall apportion the earnings, subject to revisions by the association at any time, "by first paying dividends on the paid-up capital stock not exceeding six per centum per annum, then setting aside not less than ten per centum of the net profits for a reserve fund until an amount has been accumulated in said reserve fund equal to thirty per centum of the paid-up capital stock, and five per cent thereafter for an educational fund to be used in teaching coöperation, and the remainder of said net profits by uniform dividend upon the amount of purchases of shareholders and upon the wages and salaries of employees, and one-half of such uniform dividend to non-shareholders on the amount of their purchases, which may be credited to the account of such non-shareholders on account of capital stock of the association; but in productive associations such as creameries, canneries, elevators, factories, and the like, dividends shall be on raw material delivered instead of on goods purchased. In case the association is both a selling and a production concern, the dividends may be on both raw material delivered and on goods purchased by the patrons." The law provides that no corporation or association doing business for profit shall be entitled to the use of the term "coöperative" as part of its corporate or business name unless it has complied with the provisions of the act.

The Nebraska Law

In Nebraska, a law, Senate File No. 88, defines coöperative associations and gives coöperation a definite legal status. The law says, "for the purpose of this act, the words 'coöperative company, corporation, or association' are defined to mean a company, corporation, or association which authorizes the distribution of its earnings in part or wholly, on the basis of, or in proportion to, the amount of property bought from or sold to members, or of labor performed, or other service rendered to the corporation." It differs from the general incorporation law of Nebraska by providing that every coöperative corporation has the power "to regulate and limit the right of stockholders to transfer their stock; and to make by-laws for the management of its affairs, and to provide thereon the term and limitation of stock ownership, and for the distribution of its earnings."

The California Law

In California, a law has been enacted relating to the incorporation, organization, management, and coöperation of agricultural, viticultural, and horticultural nonprofit associations. The law provides that: —

"Such association shall not have a capital stock, and its business shall not be carried on for profit. Any person or any number of persons, in addition to the original incorporators, may become members of such association, upon such terms and conditions as to membership, and subject to such rules and regulations as to their, and each of their, contract and other rights and liabilities between it and the member, as the said association shall provide in its by-laws. The association shall issue a certificate of membership to each member, but the said membership, or the said certificate thereof, shall not be assigned by a member to any other person, nor shall the assigns thereof be entitled to membership in the association, or to any property rights or interests therein. Nor shall a purchaser at execution sale, or any other person who may succeed by operation of law or otherwise to the property interests of a member, be entitled to membership, or become a member of the association by virtue of such transfer. The board of directors may, however, by motion duly adopted by it, consent to such assignment or transfer and to the acceptance of the assignee or transferee as a member of the association, but the association shall have the right, by its by-laws, to provide for or against the assignment of membership certificates, and also the terms and conditions upon which any such transfer or assignment shall be allowed."

The California law states that, "whether the voting power and property rights and interests of each member shall be equal or unequal, and if unequal the articles shall set forth a general rule or rules applicable to all members by which the voting power and the property rights and interests, respectively, of each member may and shall be determined and fixed, but the association shall have power to admit new members who shall be entitled to vote and to share in the property of the association with the old members, in accordance with such general rule. This provision of the articles of incorporation shall not be altered, amended, or repealed except by unanimous written consent or the vote of all the members."

Under the California law each association may by its by-laws approve —

> "The amount of membership fee, if any, and the amount which each member shall be required to pay annually, or from time to time, if at all, to carry on the business of the association.
>
> "The number and qualifications of members of the association and the conditions precedent to membership and the method, time, and manner of permitting members to withdraw, and providing for the assignment and transfer of the interest of members, and the manner of determining the value of such interest and providing for the purchase of such interest by the association upon the death, withdrawal, or expulsion of a member or upon the forfeiture of his membership, at the option of the association.
>
> "Permitting members to vote by their proxies, and determining the conditions, manner, form, and effect thereof."

Each association shall also have the power —

> "To appoint such agents and officers as its business may require, and such appointed agents may be either persons or corporations; or admit persons to membership in the association, and to expel any member pursuant to the provisions of its by-laws; to forfeit the membership of any member for violation of any agreement between him and the association, or for his violation of its by-laws.

"To purchase or otherwise acquire, hold, own, sell, and otherwise dispose of any and every kind or kinds of real and personal property necessary to carry on its business, and to acquire by purchase or otherwise the interest of any member in the property of the association.

"Upon the written assent or by a vote of members representing two-thirds of the total votes of all members to coöperate with any other coöperative corporation or corporations for the coöperative and more economical carrying on of their respective businesses, by consolidation as provided in section 653i of this code, whereupon the effect of such consolidation shall be the same as declared in said section; or upon resolution, adopted by its board of directors, to enter into all necessary and proper contracts and agreements, and to make all necessary and proper stipulations and arrangements with any other coöperative corporation or corporations for the coöperative and more economical carrying on of its business, or any part or parts thereof; or any two or more coöperative corporations organized under this title, upon resolutions, adopted by their respective boards of directors, may, for the purpose of more economically carrying on their respective businesses, by agreement between them, unite in employing and using, or several associations may separately employ and use, the same methods, means and agencies for carrying on and conducting their respective businesses."

In some of the states, an effort is now being made to reorganize on a non-profit basis some of the farmers' associations that were formerly organized under the stock corporation laws. The reorganization presents many difficulties. Two general methods are being followed in bringing it about. When legally possible to do so, it is effected by amending the articles of incorporation under which the association was originally formed along the lines desired. When the articles are not subject to amendment, the corporation has to be dissolved, a new corporation is then formed on a non-profit basis, and it may take over the property and interests of the former corporation.

PRINCIPLES TO BE INCLUDED IN NEW LAWS

Those who are interested in the coöperative movement should have the corporation laws of each state examined to determine whether their provisions permit the organization of farmers' associations on the coöperative plan. If the laws are found to be inadequate, new legislation may be enacted embodying the fundamental features set forth.

The present corporation laws of many states may be used as a basis for a new law. If this policy is followed, the coöperative corporation should be given under the new law the right to regulate and limit the right of stockholders to transfer their stock, and to make by-laws for the managements of its business, to regulate the limitation of stock ownership, and to provide the method of distributing its surplus earnings. Whether these provisions shall be set forth in the law, as they have been to a greater or less extent in Wisconsin, or left for the corporation to provide in its by-laws as they have been in Nebraska, is a detail to be considered in each state.

If a new law is to be enacted to cover a non-profit, non-stock corporation, the features of the California law, together with the articles of incorporation and by-laws given on other pages, will be suggestive. Whatever the form of organization, it should be remembered that to be coöperative, the aim of the association should not be pecuniary profit. The capital stock and dividends should therefore be limited, if it is a capital stock corporation;

the methods of distributing the surplus earnings should be under the legal control of the members, or should be defined by the statute; the dividends on stock, if paid at all, should usually not exceed the customary rate of interest; after a reasonable reserve is retained, the basis of distributing the remaining surplus should be proportional to the product contributed or to other service rendered by each member; and the voting power of the members should be equal, if possible, or proportional to the amount of product contributed by each member or to other service rendered.

CHAPTER IV

THE ORGANIZATION OF A FARMERS' COÖPERATIVE ASSOCIATION

THE first step in organizing a coöperative association is to secure a charter from the state, following the method prescribed by the law under which the charter is secured. The application for a charter, which is generally made to the Secretary of State, usually sets forth the name of the proposed association, its general nature and purpose, the term for which it is to exist, the place of business, the number and names of the directors, the amount of capital stock, and such other matters as may be required under the law.

CHARTER OF A CITRUS FRUIT ASSOCIATION

In order to show some of the features to be provided in a charter, the following articles of incorporation set forth what is included in the charter of some of the non-profit coöperative citrus fruit marketing organizations in California. Provisions of a similar nature, though of course varying in details for different kinds of business, will need to be incorporated in a charter taken out for any business coöperative corporation.

ARTICLES OF INCORPORATION

OF THE

________________________ ASSOCIATION

OF

____________________, CALIFORNIA.

We, the undersigned, a majority of whom are citizens and residents of the State of California, have this day voluntarily associated ourselves together as an incorporation under the laws of the State of California providing for the incorporation of Agricultural and Horticultural non-profit coöperative associations, and we hereby adopt the following Articles of Incorporation:

First, The name of the said incorporation shall be ____________ Association.

Second, The purpose for which it is formed is without profit and without capital stock to transact the business of receiving, curing, packing, and marketing oranges, lemons, and other citrus fruits grown by or under the control of the members of this association in the vicinity of and tributary to the packing-house of this association at ____________, California; and incidentally thereto to buy, own, mortgage, sell, or lease sufficient real estate for the proper transaction of its business, to erect thereon a packing-house and all other buildings appurtenant thereto:

To acquire, own, hold, sell, assign, or hypothecate any stock or bonds of any other incorporation which may operate in connection with this corporation or its members either in furnishing orchard or packing-house supplies; marketing its products or affiliated in packing operations.

And after deducting actual cost of operation to distribute the net proceeds of all fruit received, handled, and sold among its members *pro rata* according to the amount, variety, and grade of fruits furnished by its members respectively under such system of pools as may be from time to time established by the Directors.

Third, The place where its principal business will be transacted is ____________, California.

Fourth, The term for which it is to exist is fifty years.

Fifth, The number of directors of this corporation shall be __________ who shall continue to hold office until their successors are chosen and qualified; and the names and residences of those selected for the first year and until their successors shall have been elected and accepted office shall be

____________________ of __________, California.
____________________ of __________, California.

Sixth, The voting power and the property rights and interests of its members shall not be equal, but on the contrary members will contribute to the investment necessary for operation in the true proportion that the number of bearing acres of citrus orchards owned or controlled by each member respectively bears to the whole number of bearing acres from which citrus fruits are delivered or engaged to be delivered to this association any time during the year such memberships are issued; and the voting power, property right, and interest of each member shall be in the proportion of such contribution, and under this rule this association shall have power to, from time to time, admit new members who shall be entitled to vote and to share in the property of this corporation the same as the old members.

Seventh, A certificate of membership shall be issued to each member of this corporation which shall not be assignable or entitle the assignee to any voting power, property right, or interest except as may be provided by the by-laws of this corporation.

In witness whereof, We have hereunto set our hands and seals this __________ day of __________ 1911.

____________________(SEAL)
____________________(SEAL)

State of California
County of __________ } ss.

On this ____ day of ________, 1911, before me, __________ a Notary Public in and for the county of __________ residing therein, duly commissioned and sworn, personally appeared

____

____

known to me to be the persons whose names are subscribed to the within instrument, and they acknowledged to me that they executed the same.

In witness whereof, I have
hereunto set my hand and affixed my
official seal the day and year in
this certificate last above written.

____
Notary Public in and for said
________________County, California.

THE BY-LAWS

After the charter is secured the coöperators are ready to organize and arrange the method of transacting their operations. The incorporators, stockholders, or members meet and adopt a set of regulations for the conduct of the business. The by-laws must be consistent with the state and federal constitutions and statutes and with the provisions of the charter itself.

The following by-laws include most of the provisions generally set forth in such regulations for a citrus fruit organization. They are adapted to the non-profit citrus fruit marketing organization in California. They contain a contract similar in scope to the general crop agreement already cited.

BY-LAWS OF THE
________________________ASSOCIATION

We, the undersigned members of the __________________ Association, constituting a majority of all the members and having more than a majority of all the votes of said Association, do hereby adopt the following new by-laws of said corporation:

1. A certificate of membership shall be issued to each member,

who thereunder shall have as many votes at all meetings as he has bearing acres of citrus orchards from which the fruit is being marketed through this Association. The number of such acres shall be fixed by the Board of Directors from time to time as may be necessary or proper and indorsed upon the margin of the membership certificate respectively and a record thereof kept in the books of the corporation. Each member will pay an initial fee of One Dollar for each of such bearing acres, and will further from time to time contribute his *pro rata* share of all sums required for packing operations, to be paid either in cash or by deductions from fruit sales as the Directors may determine, but all voting power of any member shall cease when he parts with the control of the orchard for which such certificate was issued.

2. Such certificates of membership shall not be assignable, and the assignment thereof shall not transfer to the assignee any voting power, property right, or interest in this corporation except when transferred in connection with the *bona fide* sale and to the purchaser of the orchard for which it was issued.

3. Any member of this corporation may be expelled by members representing two-thirds of all the votes of the corporation for any reason which may to them seem sufficient at any general or special meeting, providing the interest of such member in the assets of the corporation be appraised by the Board of Directors and tendered in gold coin to such member within sixty days, conditioned only upon the return and cancellation of his certificate of membership — and upon such expulsion all right of such member in said corporation ceases.

4. This corporation will be affiliated with the ________________ ______ in the marketing of its fruit, and will avail itself of the marketing facilities of the ______ and participate in its management through such representatives as may from time to time be authorized.

5. All deductions which have heretofore been made or which may be hereafter made from sales of fruit to meet subscriptions to the stock of the ________________ or other corporation furnishing packing-house or orchard supplies for the membership, shall be treated as a packing charge ratably on all boxes of fruit

packed during the year such subscriptions were or will be respectively paid. The debit balance of such stock investment shall be inventoried each year as packing-house supplies, and all principal or interest repaid shall be ratably credited to the boxes packed each year as repaid respectively.

6. The Board of Directors may fix the boundaries of the territory tributary to the packing-house of this Association from which fruit will be received and packed, but after a member has been accepted no change shall be made in boundaries which will exclude him without his consent until his property right and interest in the corporation has been appraised by the Board of Directors and the value thereof so found paid to him in gold coin on surrender of his membership certificate.

ANNUAL MEETINGS

7. The annual meeting of this corporation shall be held at the packing-house on the second Saturday in September of each year at the hour of 9 o'clock A.M. The Secretary shall mail to each member a notice of said meeting at least two weeks prior to the date thereof.

The President of the Board of Directors shall preside at the annual meeting of members; in case of his absence the Vice President shall preside, and in case of the absence of both, the members shall select a Chairman to preside for the time being.

At this meeting Directors shall be elected, who shall serve for one year, or until their successors shall be elected and qualified; and such other business shall be transacted as may properly come before the meeting. In the election of Directors, or the transaction of any other business, each member shall have as many votes as he has acres of bearing orchards marketed through this Association.

Proxies may be voted by any member or representative of a member, authorized in writing to do so, such authority having first been filed with the Secretary.

Special meetings of the members may be called by the Board of Directors at any time by mailing notices to each member at least one week previously thereto, and one-third of the resident members shall constitute a quorum to do business at any meeting of members.

At any such meeting, by a majority of all votes, the office of any Director or Directors may be declared vacant, and the meeting may at once proceed to elect Directors to fill such vacancies.

DIRECTORS' MEETINGS

8. The Directors shall hold a meeting immediately after the adjournment of the annual meeting, or not later than one week thereafter and organize by electing one of their number President and one Vice President. They shall also elect a Secretary and Manager, and designate such bank or banks to act as Treasuries as they may see fit.

The Directors shall hold regular meetings on the last Tuesday in each month, at the hour of 1.30 P.M. at the packing-house.

Special meetings of the Board of Directors may be called by the President at any time, at least one day's notice thereof being given by verbal or written notification.

DUTIES OF DIRECTORS

9. The Board of Directors shall have general management of the affairs of the Corporation, authorize all expenditures, make all contracts, and constitute the governing power of the Corporation in all matters of business. They shall elect a foreman, and such other employees as they deem necessary to the proper carrying on of the business of the Corporation, shall fix their salaries, and define their duties.

The Board of Directors shall enter into such business relations with the ________________ Fruit Exchange or other organization forming a part of the ____________, for the marketing of fruit and such other matters as they deem necessary to best promote the interests of this Corporation, and may adopt such rules and regulations with reference to the officers and members of this Corporation in the handling and marketing of their fruit as they shall deem best to promote the objects for which this Corporation is created.

Nothing in this article shall be so taken or construed as to authorize any other organization to incur any debt or obligation on behalf of or which shall be binding on this Corporation, without the full consent of the Board of Directors of this Corporation.

In case of damage from any cause to any crop, the Directors may exclude such orchard, in whole or in part, from participating in the benefits of this Corporation. In which event the grower may market such rejected fruit to the best advantage, either through this Corporation on his separate account or otherwise.

Books and Accounts

10. The Directors shall cause proper books to be kept, showing the amount of fruit delivered by each member, and the variety and grade thereof. The books and correspondence of the Corporation shall be in the name of the Corporation, and each member shall have access to said books and correspondence on any business day during ordinary business hours. A suitable office shall be maintained at the packing-house, which shall be the office and headquarters of the Corporation.

Membership

11. Any *bona fide* grower of citrus fruits properly tributary to the packing-house of this Association, who shall sign the contract hereto appended, may become a member of this Corporation by contributing his *pro rata* share of the operating investment in accordance with the Articles of Incorporation.

All growers signing said by-laws and contract thereby become members of this Corporation for the entire period for which it is incorporated, subject to the privilege of withdrawal as provided for in Article VII.

No new members shall be received into the corporation after the fifteenth day of November, during the disposal of the present crop of each year, except in the case of new purchasers of groves, who may become members with the consent of the Directors.

DUTIES OF MEMBERS

12. It shall be the duty of all members of this Corporation, and they hereby agree, to sell and market their citrus fruit through the agency of or by means provided and directed or by the agency or agents selected and employed by this Corporation only, and no member shall be at liberty to sell, market, or consign his citrus fruits through or by any other agency than such as are directed and provided or selected and employed by this corporation.

In case any member of this Corporation does otherwise sell, market, or consign his said citrus fruits, his voting power and interest in this Association is forfeited, and he shall immediately pay to the Treasurer of this Corporation the sum of Twenty-five (25) cents for each and every packed box of commercial weight so sold, marketed, or consigned during the remainder of such fiscal year as liquidated damages; it being impracticable and extremely difficult to fix the actual damages suffered by this Corporation. In default of such payment, the same may be recovered by action in any court having jurisdiction, in the name of this Corporation as plaintiff.

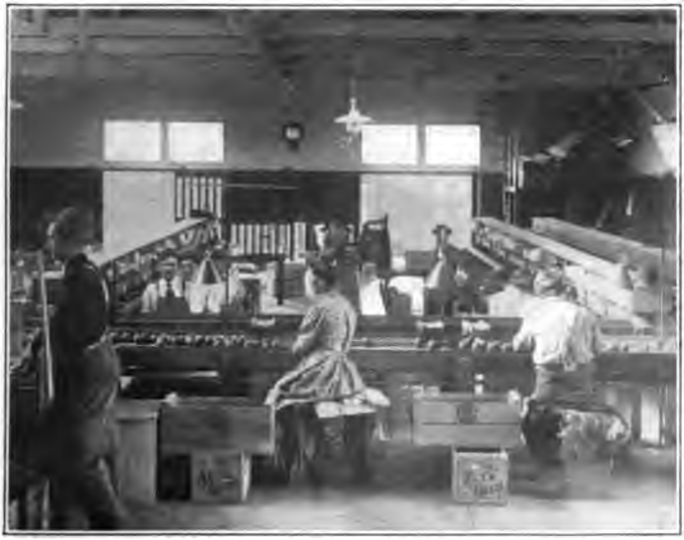
Every member selling or shipping fruit through or by means established or authorized by this corporation, shall pay such equal brokerage per box as may be found necessary to create such a revenue as will defray all expenses necessarily incurred in the conduct of the business of the Corporation.

It shall be the duty of all members to see that their fruit is picked and handled in as careful a manner as possible, and all fruit shall be delivered to the packing-house on conveyances with easy springs. Any fruit handled in a careless manner or contrary to the above rule shall be subject to rejection.

And when by a majority of votes the members have adopted coöperative picking of fruit, each member shall have his fruit picked by the Association at such times and in such quantities or proportion as the Board of Directors may direct.

PLATE IV.—Orange Packing-house and Equipment. Chapters IV, VIII.

ORANGE PACKING-HOUSE. REDLANDS, CALIFORNIA.



ORANGE GRADING-TABLE AND SIZING-MACHINE.

WITHDRAWALS

13. Any member may withdraw his citrus fruit for any year by filing a notice in writing with the Secretary of this Corporation during the first fourteen days in September in any year, stating that he withdraws his citrus fruits from the control of the Corporation for the next ensuing year.

The Secretary shall present this notice within ten days from the receipt thereof to the President, who shall immediately sign and deliver a release to the applicant for such withdrawal; and the record of said withdrawal shall be made in the books of the Corporation. No member shall be permitted to withdraw who shall be indebted in any manner to this Corporation, or have its property in its possession, until such indebtedness shall have been fully paid, or such property restored to the Corporation.

GRADING AND MAKING PAYMENTS

14. Picking orders shall be given out *pro rata* as nearly as possible. Each variety of fruit shall be graded according to quality, and each member shall receive credit for the number of pounds delivered of each variety and grade that may be established, and receive pay for the same on the basis of what all fruit of similar grade has been sold for, in the particular pool in which his fruit was delivered, less expenses. The net proceeds of sales shall be distributed *pro rata* from time to time as fast as the returns become available.

FUNDS

15. The funds of the corporation shall be deposited upon their receipt by the Secretary with the bank or banks designated as Treasuries, and shall only be paid out on warrants signed by the President or Vice President and the Secretary.

BRANDS

16. A brand or brands shall be established which shall be placed on the end of each box of fruit. All boxes shall have

marked thereon the name and grade of the fruit therein. The brands together with the books and correspondence shall be the property of the Corporation.

POOLS

17. The Board of Directors shall have authority to determine into what pools deliveries of fruit shall be divided, both of oranges and lemons. Members may express their preference in the annual meeting, and the Directors will be guided thereby, but may change same when in their judgment it becomes advisable for the best interests of the Corporation.

LEMONS

18. Members having facilities for curing lemons and who in the judgment of the packing foreman are properly curing the same may have the option of delivering the same in any month irrespective of the time of picking; provided, however, that should there be a demand for lemons beyond the supply in the curing house, the manager may call on each member so holding fruit for his *pro rata* share to supply such demand.

19. Members holding lemons shall be required to furnish the manager at the end of each month a statement showing the number of boxes picked during said month.

LEMON POOLS

20. The Board of Directors shall be given the option of making monthly or semimonthly lemon pools, each pool constituting a transaction by itself; but in all cases before the same comes into effect, the members shall be notified one week in advance.

21. No fruit shall be marketed by this Corporation that does not come through the ordinary channels of membership, and no member shall be allowed to purchase fruit outside of _____ and market it through this Corporation.

22. The expense of curing, packing, and marketing lemons shall be kept separate and distinct from all other citrus fruits.

23. These By-laws may be amended or altered by a vote of two-thirds of all votes at the annual meeting, or at any special meeting called for that purpose.

24. Nothing contained in these By-laws shall be construed to interfere with *bona fide* sales of orchard property, together with the fruit thereon, and any purchaser of such property may at his option, upon signing the by-laws and contract and either purchasing the certificate of the former owner or contributing his *pro rata* share of the operating investment, have the same membership rights as the original member.

25. On all questions as to the interpretation of these By-laws, the decision of the Directors shall be final, unless rescinded at a general meeting of the Corporation.

26. All By-laws other than the foregoing are hereby repealed.

CONTRACT

We, the undersigned, growers of citrus fruits, being desirous of having our fruit handled in a manner substantially as set forth in the above by-laws, do, for such purpose, hereby severally constitute and appoint the ________________, California, a Corporation organized under the laws of the State of California, our sole agent to pack and sell all citrus fruits which may be grown on our respective orchards, during the entire period of membership in said corporation. We and each of us do further agree that all expenses incurred by said Corporation in handling and marketing said fruits shall be paid out of the proceeds of the sale of said fruit *pro rata*, according to the amount of fruit furnished by each of us respectively, and we and each of us agree to accept for the crop our *pro rata* share of the net proceeds of the sale of fruit furnished by us, after deducting the cost of packing, selling, and other necessary expenses. Nothing herein contained shall be construed to interfere with *bona fide* sales of orchard property. Any and each of us who will otherwise dispose of the merchantable fruit grown on the property hereby contracted, during the period of this contract, shall pay to the Corporation the sum of Twenty-five (25) cents for each and every packed box

of commercial weight so sold, marketed, or consigned, as liquidated damages, as provided in the foregoing By-laws, which are hereby made a part of this contract.

THE FEDERATION OF COÖPERATIVE ASSOCIATIONS

The business of a coöperative association can be carried on more economically and effectively when a number of them federate into a coöperative union which represents them in handling the problems that are common to them all. From the business standpoint, the advantage that the capitalist derives from the centralization of large amounts of capital into corporations can be obtained by the producer by the federation of coöperative associations in a central democratic organization. The federation can develop a comprehensive marketing system; it can reduce the cost of production, of preparing the products for shipment, and the distribution and sale of the products. Such a coöperative union should be democratic in principle and not autocratic. It should represent centralized coöperation. It handles the questions that affect the local associations as their representative or agent, and it can perform this function more economically and efficiently because the expense of comprehensive management is prohibitive in a small association. Like the large corporation, a central coöperative union representing a number of associations has a larger influence than a small group of farmers working alone in dealing with transportation, legislative, and other public policy questions, in the purchase of supplies, the distribution and sale of products, in the development of markets, and in preventing the enormous wastes of fierce and unrestrained competition.

The principle of federation may be carried as far as the problems of an industry warrant. The farmers of a locality can group themselves into local organizations, these in turn can federate into district associations which handle the common problems of the local organizations, and the district associations in turn may federate into larger central coöperative unions which represent the district associations in handling the larger questions and the marketing policies for the entire industry. This system of coöperative federations is already in operation in the citrus industry in California, and it is the common method abroad of handling the coöperative credit systems, the associations for the distribution and sale of farm products, and other coöperative enterprises.

Necessity of a Federation of Associations for Handling Farm Products

A federation of associations is especially needed to handle the distribution and marketing of farm crops and to protect the producer in the purchase of supplies. There is a tendency among those who handle the common necessities of life to organize in such a manner as to restrict competition, to regulate the sale of produce, and the price paid to producers, and to control the prices that the consumers have to pay. It has been shown by an investigation of the Attorney-general of New York State[1] that the control of the milk supply of New York City is in the hands of a few large corporations and associations of milk dealers, that the price which the New York State dairyman receives for the milk does not often exceed the cost of production and sometimes falls below the production cost, and that the price which the consumer pays for bottled milk and milk in other forms has been generally and arbitrarily raised at different times in the past. It has been shown also that the large dealers in milk have used coercive methods to prevent independent dealers or any other agency that might improve the condition of the dairyman from establishing a milk trade in the city of New York. The wheat and corn growers of the Central West faced a similar condition a few years ago as a result of the arbitrary action of the line elevators and independent elevator companies who coerced the railroads and the receivers of grain to the extent of making it impossible for an individual grower to market the crop except under conditions which they dictated. The individual producer of beef or pork is in the same condition as a result of the meat industry having passed into the hands of a few large corporations which are in position to dictate the price of live-stock. An individual grower cannot cope with a situation of this kind.

---

[1] Report of the Attorney-general in the Matter of Milk Investigation, Senate Document No. 45, 1910.

A small association can adopt rules of grading and can standardize and economize in preparing the product for market, but it cannot develop a comprehensive system either to meet competition or to develop markets, nor can it handle the general problems that affect an industry in a larger way, though it can manage these questions more effectively than the individual who acts alone.

When several associations have been formed to handle the product of an industry, like potatoes, apples, milk, butter, poultry, citrus fruits, or cotton, the associations in each special line can organize a marketing agency to provide the marketing facilities for them all. This agency can develop markets for the associations by advertising or in other ways; can furnish daily information on the conditions of the markets to all of the associations; it can take the necessary steps to meet unfair business competition and act as an agent in securing supplies, in handling the transportation, legal, and other general questions that affect all of the associations alike.

Coöperative Organization of the Federation

The central federation should be organized on coöperative principles, and the dominant feature in its management should be coöperation and not centralization. The membership of the federation is composed of the associations, and each is represented on its board of directors. Each association preserves its own freedom and individuality but they join together under a legal form to promote the business interests of the industry. The federation may be formed on a non-stock basis or with limited capital stock and with the fundamental coöperative principles as set forth in the preceding pages included. No dividends greater than the customary rate of interest should be paid on the stock. The federation should perform its functions for the associations at cost. The money needed for operating expenses should be raised by assessing a fixed amount per unit of material sold, or by an arbitrary retention of a fixed percentage on the gross sales. The surplus earnings at the end of the season are prorated proportionally to the associations, or deficits are met by proportional assessments.

Necessity of Preserving the Individuality of the Associations

While there must be a complete unity of management, it is fundamental that a central federation shall be formed so as not to destroy the initiative and individuality of each locality or of different groups of farmers who may be associated for a common purpose in the same locality. It may permit a large individual producer to market his produce through it, the central agency handling the produce of the individual grower on the same basis as it handles the produce of the associations. In this way, a large grower who would otherwise dispose of his crops as an individual will often become identified with the coöperative movement. He will reap its benefits and will give to it his experience and advice. The central agency should not attempt to consolidate or amalgamate the growers of the different associations into one central body, nor should it dictate or control the policies of the local organizations. The local organizations must be preserved with a large amount of freedom and individuality. To amalgamate farmers into one large central organization will kill local pride and ambition. It is fundamentally wrong in principle. On the other hand, it is sound public policy to preserve the local associations by federating those that are formed for the same special purpose into a coöperative central agency through which their respective businesses may be carried on more economically, while yet retaining their local freedom and individuality.

The central organization, however, should coöperate with the district and with the local associations in building up the coöperative spirit among the members. It should assist in the organization of new associations or district divisions by helping secure the charter, constitution, and by-laws and in such other matters as tend to perfect the organization. It should coöperate with the local associations in establishing the most approved methods of management, of accounting and other details of operation. It should be given authority by the directors to place experts in the field to help in the standardization of the handling, grading, and preparation of farm products for market, so that there may be established standard grades that have a definite meaning with the trade, and it should have the authority to advise and assist the local associations in every way that builds up the coöperative movement.

It has been found in European countries that the coöperation of central organizations with the local associations has been a leading factor in the successful establishment of the coöperative method of conducting business. The experts sent out by the central body become a strong educational factor among the cow-testing, cattle-breeding, butter-making, egg-shipping, and crop-distributing associations. It is the only practical method of standardizing the grading and preparation of the farm products for market, because the local associations when left to themselves vary widely in the efficiency of management and cannot attain that uniformity in their products that is essential if the central agency is to develop the most reliable and comprehensive marketing plan.

The Organization of a Federation

In some of the states, central agencies have been formed under the laws which permit the consolidation of corporations formed for pecuniary profit. The laws of most of the states do not provide for the consolidation of coöperative associations into central federations which operate on coöperative principles. The right to form these central agencies should be incorporated in the laws of every state. If the organization is formed to bring about the advantages of the coöperative plan, it may operate with a reasonable degree of satisfaction even under the form of a stock corporation for profit. Usually, however, these central agencies are formed as stock corporations for pecuniary profit, and, like any other corporation of this type, the stockholders are primarily interested in dividends rather than in the general welfare of the farmer. To illustrate, an organization has recently been formed to act as an agent for individuals and for associations in selling fruit and vegetables. Prominent fruit-growers have become directors, under the supposition that it is formed as a coöperative organization. In reality, it is a stock corporation formed among the fruit-growers by men whose object is to make money by handling the growers' products. The majority of the stock is held by the officers who organized it and who were former fruit-dealers. The voting power of the stockholders is proportional to the amount of stock held. Therefore, the promoters control it. Dividends are declared and paid out of the surplus profits as often and at such times as the board of directors may determine. It sells and distributes the fruit at a cost of 5 per cent on the gross sales. It has no contract with the growers, and, like many others, it is a loosely formed organization promoted by dealers who are interested, not in fruit-growing, but in stock dividends, surrounded by a glamour of coöperation, operating primarily for pecuniary profit and under the absolute control of the exploiters who organized it.

It is not to be inferred from these statements that all of the corporations formed to handle farm products for pecuniary profit have been without benefit to the producer. In many sections the farmers are not ready for the coöperative method of conducting their business. Under these conditions, a corporation for profit controlled by the producers may be formed and may bring to the farmer a larger return for his crops than he would have gained had he attempted to market them alone. In some instances, these corporations have successfully marketed the crops of a community and at the same time have paid dividends on the capital stock of 20, 30, and even 50 per cent to the grower-stockholder, the dividends arising from profits made on supplies sold to the members and from the surplus above operating expenses when the corporation operated on a fixed percentage of the gross sales.

On the other hand, many corporations have been formed by the trade to distribute and market farm products for the producer. In some, the stock is owned jointly by the trade and by the producers as individuals or by associations of producers. These latter organizations are usually organized and managed by the trade, and the producers are included as a means of giving them better standing among the farmers. These organizations may help a local situation temporarily, but they can have but one ending, either the producers or the trade will eventually gain control and operate the corporation for their special benefit. It is an impossible condition for the trade and the producers to manage a marketing corporation jointly. Their interests are antagonistic, and the final outcome is a divorce of the two interests or the absorption of one by the other. A striking example of this kind was an attempt made by the citrus fruit-growers' organizations and the speculative shippers of California a few years ago to form an agency through which all of their products should be distributed and sold. The plan was ambitious, the agency was formed, and at the end of a year and a half it was dissolved because it was fundamentally unsound to attempt to amalgamate these antagonistic interests in one general organization. Similar efforts are being made at the present time in other industries, and they will continue to be promoted in the future by either the producers or by members of the trade who are unable to handle a marketing situation alone; such efforts will not solve the business problems of rural life, their ultimate effect is likely to retard the coöperative movement and the development of an industry. We desire to convey in these remarks the fact that these growers' and shippers' organizations formed for pecuniary profit are not organized on the coöperative plan. Their aim is to handle the distributing business a little more economically and efficiently than the individual can do alone and earn enough to make a profit on the capital invested. The degree of success depends on the character of the men who organize and manage them. If the stockholders are composed largely of growers, the organization is likely to be conducted with some of the coöperative features included, but if it is composed of fruit-dealers and shippers who have little interest in the production of crops, then, like any other corporation, the primary object is to handle the farmers' business in such a way as to bring to the capital invested the largest possible return. Under these conditions, the coöperative organizations may be systematically exploited by those who represent them in the marketing of their products.

The coöperative method of conducting business is growing rapidly in favor in the United States. It is discussed widely by educators, legislators, and by the public press. Already there are many signs that the stock corporations promoters are laying plans and are at work to induce the farmers to organize so that their business may be handled more effectively by those who are interested in their formation. These movements need to be scanned carefully before the producer identifies himself with them. If they are formed as money-making projects for the promoters, they will not help the American farmer reorganize his business operations in a way that will promote the solution of the rural economic problem.

Coöperative Associations and Public Policy Questions

One of the grave dangers that confronts a coöperative organization is the temptation to take part in partisan political questions. There are many enthusiastic farmers who try to commit their organizations to candidates for office, or to one phase or another of a controversial question. There are also many skillful politicians who endeavor to secure the support of the farmers' organizations in the interest of either measures or men, and, in the heat of a political campaign the members of an organization, who as individuals are interested in practical politics, often use every effort to secure the indorsement of the association of the measures or men in which they are interested.

An organization formed by the farmers for industrial purposes should not indorse candidates for office or take part in a movement that is primarily political. There may be public policy questions of an economic nature, such as the tariff, railroad rate legislation, and other legislative questions that affect the welfare of the industry, on which it may be advisable for an organization to express its judgment or to take an active part in the shaping of the public policy affecting it. But even on these questions, a farmers' organization formed for industrial purposes should be slow to act and should only express itself when a vital issue is involved.

There are members in every farmers' organization of widely different shades of political conviction. It is a common practice of the opponents of the coöperative method to endeavor to have an association commit itself on a political question or to indorse a candidate for office in order to create dissension among the members. Any such action on the part of an association is sure to create dissension and in the end to disrupt an organization.

A coöperative organization that is formed to distribute farm products or to purchase supplies or for any other special purpose should confine its efforts in that direction. A distributing organization, for example, cannot handle the public policy questions that affect the industry outside of the marketing problems without more or less friction with other similar organizations. There is usually a strong rivalry among these associations, and it is difficult to secure the coöperation of all of the organizations in an industry in handling a general question which affects them all alike. If an attempt is made to handle a public policy question through any one of the existing distributing organizations, an agricultural industry is almost sure to fail in an effort to meet and solve the transportation questions, the state and national legislative questions and other public policy matters that affect it.

The Citrus Protective League of California

The California citrus industry has formed a voluntary organization known as the Citrus Protective League to handle the public policy questions that affect the industry as a whole. A brief discussion of this League will indicate the opportunity for organization along these lines. The League represents about 90 per cent of the shippers and shipping organizations in all parts of the state in handling such questions as railroad rates and transportation problems, customs tariffs and other governmental relations, state and federal legislation that applies directly to the citrus business, and all other questions of a general nature that affect the upbuilding of the industry, except the marketing of the fruit.

The citrus industry of California represents $150,000,000 to $200,000,000 capital invested. Ten to fifteen thousand growers cultivate the fruit, 100,000 people depend on it for a living, and from 15,000,000 to 20,000,000 boxes valued at 20 to 35 million dollars are shipped annually from the state. The industry is very highly specialized. None other in agriculture is held together by larger common interests or is brought in closer contact with organized business on every hand and has larger public policy questions confronting it.

The League makes it possible for all of the shippers and growers to stand together in handling the general questions that affect the industry and through which they may coöperate in the general upbuilding of the industry. It avoids all questions that lie within the province of the established marketing agencies. It keeps away from political questions. It vigorously defends the growers and shippers whenever their interests are jeopardized by legislation, by unjust railroad rates, or by other public policy relations. It develops a constructive policy for the improvement of the cultural practices of the growers and of the fruit-handling methods of the shipper and then secures the coöperation of the state and federal agencies best adapted to the investigation and upbuilding of these lines. The League is a unique organization among the agricultural industries of America. It is applying the methods that have contributed so much to modern industrial progress to the problems of the orange and lemon grower. It is a voluntary organization formed by growers, shippers, and shipping organizations. It is supported by funds raised by general assessment based on the number of cars of fruit shipped by each member during the preceding year.

The work of the League has had a far-reaching effect on the industry. It has brought about reductions in the freight and refrigeration rates on citrus fruits that have saved the producers millions of dollars, the reduction of 10 cents per hundred pounds in the orange rate in 1907 adding more than four million dollars to the income of the growers in the five years following. It secured through Congress an equalization of the tariff duty between oranges and lemons by securing an increase in the duty on lemons equal to the difference in the cost of producing the lemons as compared with the oranges, the duty on lemons now being 1½ cents per pound and on oranges 1 cent per pound. It brought about a change in the federal regulations regarding the determination of decay in imported fruit which has protected the California industry against unfair competition, and it has secured the coöperation of the state and federal governments in the investigation of the nutrition troubles in citrus groves, in the study of citrus by-products, and in other questions that affect the upbuilding of the industry.

CHAPTER V

FINANCING A COÖPERATIVE ORGANIZATION

The financing of a farmers' coöperative organization may be handled in several ways. The most common methods of raising money to establish a non-profit association are the assessment of members, membership dues, and a contribution by each member in the proportion that his acreage or product bears to the total acreage or product handled through the association. After the charter is secured and the organization is formed, the usual method of securing money to erect buildings or to supply the equipment needed is to give a corporation note to a bank as security for a loan, and then to repay the bank with money raised in any of the ways already noted. If the organization is incorporated as a stock corporation for profit, the funds may be raised by the sale of stock, by adopting the method described above, or by a combination of both methods.

CITRUS-FRUIT ORGANIZATIONS

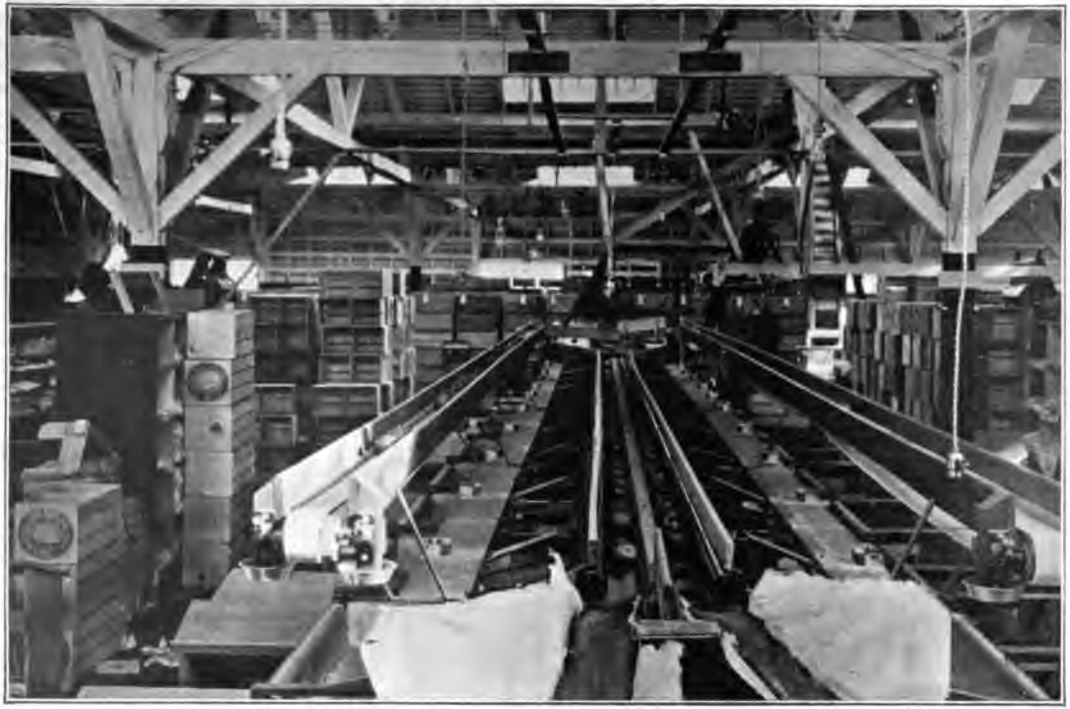
The citrus-fruit marketing associations in California, though desiring to operate on the coöperative plan, were nearly all formed under the stock corporation laws, before the non-profit agricultural association law was enacted. A brief review of their methods will be suggestive.

These associations each required a packing-house and equipment costing from $10,000 to $40,000 in which to prepare the fruit for shipment. They were usually organized with a capital stock varying from $10,000 to $50,000. The stock was issued in shares of $1 to $5 each, and was sold to citrus-growers only. Each grower could buy stock at the rate of one or more shares per acre, depending on the rule laid down by the directors. In other associations, the number of shares an individual could hold was often limited in amount. The land on which the packing-house was built was purchased or was sometimes leased from the railroad alongside of which the house was erected. The paid-in stock furnished part of the money with which to supply the facilities. In addition, the corporation secured funds from a bank by giving a corporation note as security and repaid the bank through a period of years by withholding certain percentages from the sale of fruit. These organizations, though stock associations, were not organized for pecuniary profit, and no dividends are paid on the stock. When the association is formed as a non-profit corporation, the money needed to build and equip the packing-house is secured on a corporation note and repaid by withholding a certain percentage of the proceeds of the sale of fruit, or by assessing each package sold, a definite amount.

ANNUAL FINANCING

In either the stock or non-stock corporation, the money needed to pay the operating expenses during the first few weeks of the season, including the purchase of supplies and the payment of labor, is usually secured from the banks on corporation notes and is repaid from the proceeds of the first shipments of fruit. Sometimes it is taken from a reserve fund accumulated for this purpose. The money needed by the coöperative organization or by stock corporations to cover operating expenses throughout the season is usually provided by retaining a certain percentage of the gross amount realized for the produce, or a fixed assessment per package or per weight or other unit of measure may be fixed and retained by the association. In the fruit-distributing organizations, the amount retained varies from 5 to 10 per cent of the gross sales. If the sale takes place on the owner's farm, the amount retained by the association may be smaller. If the operating expenses are provided by retaining a fixed amount per package, per hundredweight, per bushel, or other unit, the amount to be retained is arbitrarily fixed by the directors from time to time. After paying out the operating costs including rent, insurance, brokerage, reserve, and other expenses, the surplus earnings are paid as stock dividends in a stock corporation, or are prorated to the fruit of each member in proportion to the fruit shipped in a coöperative organization. In some of the associations that have been incorporated as corporations for profit, a certain proportion of the surplus is first paid as dividends to the stock, and the remainder is prorated to the members in proportion to the business transacted. This latter system is followed in many organizations which have been obliged to organize as stock corporations for pecuniary profit but which desire to operate on the coöperative plan. Some of the stock organizations make a profit on the supplies furnished the members, on the money loaned to

PLATE V.—Interior of Orange Packing-house. Showing Sizing-machines. Chapters IV, VII, VIII.



the members, and on other financial transactions, and in this way increase the stock dividends, the reserve account, and the amount prorated to the members.

DIFFICULTIES IN FINANCING

In a section where the coöperative plan is not an established method of conducting business, it is sometimes difficult to finance a new coöperative organization. Except in a few sections, the coöperative method is new to the banker. The organizations are often formed by irresponsible or inexperienced farmers who do not inspire business confidence, and who are not entitled to liberal credit consideration. They are often attacked by their competitors, who may influence the banks in which they are interested not to extend credit. Under these conditions, the banks naturally pursue a conservative course, corporation notes are not always acceptable as security for loans, and the responsible directors of the associations may be required to give personal notes as additional security. As soon as the coöperative plan is successfully established, the banks and other business institutions recognize that the method adds stability to agricultural credit. The personal notes of the directors are then no longer required for security, and the corporation note takes its own place as the most common form of association credit security. Another serious credit difficulty that the coöperative association often meets is the inability of the banks to loan more than a certain proportion of their capital stock to any one corporation. In Colorado, where the limit is 10 per cent, the associations often have difficulty in securing enough credit at the beginning of the season to properly transact their business.

One of the most serious difficulties that the farmers' coöperative association has to overcome is to fix a method of raising money to provide buildings and equipment that is fair and equitable to all of the members. For example, a packing-house with equipment may cost $20,000. If the money needed to pay for the investment is raised by retaining a percentage from the sale of produce, the grower who has a poor orchard, who cultivates poorly, whose trees are young or whose yields for any other reason are light, contributes proportionally less to the investment than the grower whose yield of fruit is heavy. After the house and equipment are paid for, the young orchards or light-bearing orchards may increase in productiveness. The owner then secures the benefits of the permanent facilities out of proportion to his contribution for their provision. If the basis of assessment is the acreage of each member, the grower whose orchards have recently come into bearing or are in light bearing pays proportionally more for the permanent investment than the man whose trees yield heavily and who has a greater use of the packing-house. If the money is raised by the sale of stock, the difficulties in relation to the control of the membership already described are encountered. These difficulties, while sometimes serious, are not grave enough to prevent the successful financing of associations by farmers who are convinced of the value of the coöperative method of conducting business.

THE PAYMENT OF DIVIDENDS

There are several methods used in the distribution of surplus earnings in farmers' organizations. In the associations that have been formed as stock corporations under the ordinary corporation law for pecuniary profit, the earnings may be apportioned entirely to the stock; or, if the corporation desires to operate for the benefit of the members, it may pay a fixed dividend to the stockholders, set aside a reserve fund, and a fund to cover depreciation, and then distribute the balance of the surplus to the members in proportion to their shipments or dealings with the corporation; or, the corporation may decide to pay no dividends on the stock, and distribute the entire surplus in proportion to the dealings of each member with the association. When the association is a non-profit corporation, the operations are conducted at cost, and the entire surplus, after a reserve fund is set aside, is prorated to the members in proportion to their dealings with the association.

The payment of high dividends on the capital stock has caused the downfall of many farmers' organizations that are formed as stock corporations, though they may conduct many of their operations on coöperative principles. These organizations are not coöperative, though they may include some coöperative features. They are stock companies organized and managed by farmers. The stockholders retain a proportion of the surplus earnings for money-making purposes or to compensate them for the risk of investing their capital just as is done in any other stock corporation. In some of the farmers' elevator companies, the stockholders are sometimes paid a dividend of 100 per cent. In some of the fruit-distributing organizations, the stockholders have been paid dividends of 10, 20, 30, or even 50 per cent on the capital stock. In others which combine some of the coöperative features, they pay to the non-stockholders who ship through the organization one-half or one-third as much, more or less, as the stock dividends; or the distribution of the surplus earnings may be made in other ways.

In one fruit-distributing organization that is formed as a stock corporation, but which shares some of the earnings with the non-stockholders and operates partly on the coöperative plan, the shipper is charged 7 per cent on the gross proceeds for operating expenses. It is provided that the capital stock shall be paid a 6 per cent dividend, that a reserve fund shall be accumulated, and if a further amount is available for distribution, it shall be divided as follows: "75 per cent amongst all growers or growers' organizations who have signed contracts and shipped consistently with this exchange during the season when this dividend has been earned, based proportionally on the gross amount realized by the fruit of such shippers; and 25 per cent to be a further dividend on paid-up stock." It is also provided that no stockholder shall hold more than ten shares of stock, or a total of one thousand dollars. This organization has been one of the most successful of the stock corporations which operate partly on coöperative principles.

The trouble that arises over the payment of dividends is usually with the members who hold a small amount of stock, and with those who utilize the marketing facilities as contract shippers, but who are not stockholders in the organization. These shippers are likely to become dissatisfied when they learn that a large surplus earning has been accumulated above the cost of operation. The payment of high dividends reduces their proceeds and enriches the growers who have money invested in the organization but who may not have contributed to its success except in the original investment. Another danger in the stock corporation is that the farmers become dissatisfied after receiving liberal dividends on their stock when business conditions are such that a dividend cannot be declared. The stock corporation that has had to organize for pecuniary profit can still bring to its members many of the advantages of the coöperative plan by refusing to pay dividends on the stock as most of the citrus-fruit associations do, or at least by paying a stock dividend not in excess of the customary rate of interest. Any other policy unless carefully guarded is likely to be followed by a loss in the confidence and support of its members and by the ultimate failure of the association.

A farmers' organization that has been chartered under the corporation laws for pecuniary profit stands on a dangerous foundation because the temptation is always great to pay large dividends on the stock when surplus earnings have been accumulated. An organization that is formed on this basis under the guise of the coöperative plan may prove a menace to the solution of the agricultural problem. If it operates for profit, it is likely to discourage a legitimate coöperative movement. The average farmer has not sufficient information to discriminate between the different kinds of organizations, and he is apt to judge all coöperative efforts by the abuses of the organizations that are not formed on the coöperative plan. An organization that is formed as a stock corporation primarily for pecuniary profit and which does not operate to some extent for the benefit of its members should be debarred by the statute from using the term "coöperation" or "coöperative" in connection with its corporate name. If, as a stock corporation, it is successful and helps the farmers who are stockholders or the contract shippers solve the problems of distribution and sale, it deserves to live, but it should not be allowed to secure the support of farmers under the supposition that it is an organization formed on coöperative principles. The coöperative method of transacting business is radically different from the usual stock corporate method. The object of the former is not primarily to declare dividends. It is formed to build up and improve the industry through the application of business methods which are carried on at cost, the earnings all going to the producer. The basis of one is capital, and a leading motive is the dividends which the capital earns; the coöperative method has personal effort joined with the efforts and products of others, all working in union to make better farming possible by giving the farmer the largest possible return for his labor and for the risk he takes in the conduct of his business.

CHAPTER VI

BREEDERS' AND GROWERS' ASSOCIATIONS

THE coöperative method of conducting the business side of agriculture may be applied in a greater or less degree to the different phases of production; to the manufacture of the products of the farm, such as butter, cheese, wine, oil, and similar products; to the handling, sale, and distribution of farm products; to the purchase of supplies, such as fertilizers, machinery, spraying, and packing material; to rural credit; and to miscellaneous services which touch the farmer, such as irrigation, the telephone, insurance, and electric power. This division of the efforts of an association is arbitrary and somewhat artificial, because any one of these functions may be handled singly, or more than one function, like production and sale and the purchase of supplies, may be combined in one association.

The coöperative method has reached its most effective development in the handling and marketing of farm products and in the purchase of supplies. These efforts affect the farmers' pocket book; they influence the business methods of agriculture visually, while the benefits that spring from other lines of activity can often be seen only through their indirect effect on better farming or better business methods. There has been less coöperative effort in crop production and in the incidental features already mentioned than in handling and marketing and in the purchase of supplies.

The coöperative method may be applied to several phases of agricultural production. Its most practical application lies in the improvement by associated rather than individual effort of crops and animals and in the protection of crops against insect pests, fungous diseases, and injurious temperatures. It may also be applied to some of the details of crop production such as the pruning of trees, the irrigation of the land, to the fumigation of trees, or other cultural features which may be handled for the individual members by a crop-marketing or separate organization. All of these problems can be met effectively by progressive farmers, but their efficiency in an industry can reach a high plane only when a group of farmers organize to apply the best-known agricultural methods to an industry as a whole. The individual farmer, for example, can fumigate or spray his trees for scale insects, and if all of the growers in his locality practice fumigation voluntarily, the trees of a community may be kept free of the pest. But there will be the widest variation in the methods of fumigation, and this will reduce the average efficiency of the whole operation. On the other hand, a coöperative organization formed by the growers of a community to handle the fumigation or spraying problem collectively brings about greater economy in work and a uniformity in the application of methods which is rarely realized through the efforts of the individual fruit-growers or by contractors who fumigate or spray the trees for the growers. Incidentally, the value of property increases in such a community, because the orchard of every grower is more productive, more attractive, and more profitable. The spirit that leads the people to meet these rural problems collectively rather than individually is quickened in such a community with a resulting impetus to every movement that leads to a better country life.

In order to set forth the manner in which the coöperative method may be applied to the production and improvement of crops and animals, a discussion of a few types of successful coöperation along these lines will follow.

COÖPERATIVE COW-TESTING ASSOCIATIONS

Every progressive dairyman understands that there is a wide variation in the amount of milk and in the quantity of butter-fat produced annually by the different cows in the herd. He can reduce the question to an exact basis by weighing the milk regularly, determining the proportion of butter-fat with a Babcock tester, and by keeping a record of the amount of food consumed by each cow. In this way, he can eliminate the unprofitable cows, and increase the efficiency of his herd. This is profitable to the dairyman, but few will adopt the plan individually. What the dairy industry needs is the application of the methods of the progressive dairyman to all of the cows of a community so that the entire industry can be raised to the level of the most successful individual.

The Danish Example

The practical way to accomplish this end was shown by a little group of dairymen in Vejen, Denmark, in 1895. These dairymen, twelve in number, owned 300 cows.

They associated themselves together and employed a tester whose business was to test the cows of each member twice a month. He kept a record of the milk, determined the butter-fat, and weighed the feed consumed by each cow. The dairymen thereby knew which cows returned a profit, which barely paid expenses, and which were supported at a loss. The Danish farmers eliminated the unprofitable cows, bred from the best, developed the coöperative method of handling the dairy industry in other ways, and by adopting the coöperative plan as a system of conducting their business have made Denmark the most progressive dairy country of the world. Twenty-five years ago the Danish cow averaged 112 pounds of butter-fat; now her annual average is twice that amount, while the average yield of milk per head, including heifers, is often 750 to 800 gallons per cow. In 1911 there were 530 of these cow-testing associations in that little country, supported mainly by the farmers and receiving in addition a grant of $30,000 to $35,000 from the Danish government for their advancement. The Danish farmer buys feed in the United States, pays transportation charges to his country, maintains his herd on high-priced land, and competes successfully with the American dairyman in the English market.

All of the leading dairy countries of Europe have adopted the coöperative cow-testing plan, and the movement has recently been spreading in the dairy sections of the United States, especially in the dairy states of the Central West. In 1910, there were more than 200 of these associations in Canada, and in 1911, there were nearly 100 associations in the United States.

The Plan of a Cow-testing Association

The plan of a cow-testing association is simple. It is usually organized around a creamery. Each association contains 13 to 26 members owning 300 or more cows, the former number if each herd is to be tested twice a month; the latter, if once a month. The members pay from $1 to $1.50 annually for the testing of each cow. The association employs a tester who is a specialist in the dairy industry and who gives the dairymen expert advice aside from the testing of the cows and pays him from $50 to $100 a month. He spends a day with each herd, provided it does not contain more than 40 cows, and he may test more than one herd in a day if they are small and not too distant or too widely separated.

The official tester weighs the milk once a month or oftener, night and morning, determines the amount of milk and butter-fat produced and the quantity of hay, roughage, and grain consumed by each cow. He determines the cost of keeping the cow each month by multiplying the result of each test by 30. At the end of the year, the farmer knows approximately how much butter-fat each cow has produced, and what it has cost to produce it. The tester leaves a record of the herd each month with the dairyman, showing the cost of feeding and the production of each cow. He keeps a detailed permanent record in the test book of the association. This book he takes with him. It is open to the inspection of every member of the association.

The value of a cow-testing association to a dairy community is incalculable. It leads to more economical feeding, better herds, and better general management. It is the only practical method that has been adopted by which the herds of a locality can be systematically improved. Purely as a business matter, every farmer ought to determine whether his cows are profitable or not. The method of cow-testing has been advocated among the dairymen for years, but comparatively few individual farmers have adopted it. The farmer is usually too busy to make a systematic test of his herd, and unless the tests are continuous and systematic, they are worthless. The coöperative plan, however, is thoroughly practical. It furnishes a striking example of a method by which a great industry can be built up by the adoption of a coöperative plan where the individual has failed.

The next step in the cow-testing association is the purchase of a high-grade bull to be used in the improvement of the herds of a community. The tests determine the unprofitable cows. These the dairyman eliminates. It fixes the most profitable animals in the herd. These the dairyman breeds to high-grade bulls and thereby improves the standard of the cows in the entire community. The plan is simple and practical. Combined with the coöperative creamery, the cow-testing association and the coöperative ownership of high-grade bulls form a nucleus through which the coöperative method of conducting business can be applied more effectively to the dairy industry than to most of the special agricultural industries of the United States.

Articles of Agreement in a Cow-testing Association

The cow-testing association may be incorporated on the coöperative plan, or it can be handled through the mutual agreement of its members without legal incorporation. A number of these organizations may be federated, as in Denmark, and the whole movement handled more systematically. The following provisions contain the essential features of a cow-testing membership agreement. The association should also provide the customary by-laws covering the officers and their duties, the board of directors, membership, dues, amendments, and the time and place of holding meetings.

Whereas, ________________ Dairy Testing Association has been organized for the principal purpose of providing means for the coöperation of its members in weighing and testing the milk of their cows periodically and for the improvement of their dairy interests, and whereas, it is proposed by said company to engage a suitable person for that purpose as soon as enough subscriptions are obtained to warrant said association to engage such person, we, the undersigned members of said association each for himself and not one for the other, severally agree to pay the sum of one dollar (____________ minimum charge) a year for each cow set opposite our respective names to said association for that purpose. Said fees to be paid in quarterly installments in advance, the first payment to be made as soon as such person is engaged by said association. Each one of us also agrees to furnish board and lodging for said person for at least one day each month and convey him to his next place of work. Said person shall not work Sundays, but shall have board and lodging over Sunday at the place where he is working Saturday.

THE COÖPERATIVE BREEDING OF LIVE-STOCK

The coöperative method furnishes a practical way by which high-grade animals and the different breeds of stock of a community can be improved and developed. Little systematic effort has been made by the farmers of the United States to improve the different kinds of live-stock. Individual breeders have built up high-grade herds and have improved different breeds, but American farmers as a whole have not been affected by these efforts. To be productive of results, animal-breeding must follow well-defined lines. The breeders must understand the fundamental principles of animal improvement, and then the farmers must be organized before community breeding can be undertaken. These qualifications or the ability to apply these principles in animal breeding are not possessed by the average farmer. Under the coöperative method, a systematic breeding plan can be adopted, the method organized and systematized under a common leadership, herds tested and weeded out, male animals owned collectively, and the herds and breeds of a community improved and developed with the same degree of efficiency that the successful individual breeder attains. The coöperative breeding work can be organized around the creamery and the cow-testing associations, or, when the aim is to develop definite qualities in animals, such as milk-producing qualities in cows, or a certain conformation or ability to lay on flesh for meat-producing purposes, the movement may be organized independently.

Coöperative Cattle-breeding in Denmark

The coöperative animal-breeding plan was first developed in Denmark, when in 1874, a cattle breeders' association was formed to keep pure and improve the Jutland breed by the use of pure-bred bulls. Twenty years ago the movement spread rapidly, and the local associations began to federate in order to have the work of the societies done according to a uniform plan, and to handle more efficiently the general problems that affected all alike. Five years ago, there were more than a thousand of these cattle breeders' associations in Denmark, owning 1300 bulls and having a total membership of 26,000. The membership includes the smallest farmers and peasants as well as the landed proprietors.

The federated associations employ an expert whose duty it is to advance the interests of the cattle breeders' associations and the test associations by attending meetings and fairs, helping the associations select the cows and bulls for breeding purposes, helping organize associations, keeping the herd books, and by assisting the individual members in every possible way.

The membership of an association averages about twenty-four. One or more bulls are purchased by the association at the ratio of one bull to fifty to seventy-five cows, the bulls being kept by the different members who submit the most favorable bids. The cows worthy to be bred to the bull are selected by a committee, the data on which the selection is based resulting from the milk, butter, and cost-of-maintenance tests and from the previous breeding of the animal.

The money required to purchase the bull and for other association purposes is paid in by the members in proportion to the number of cows each has registered in the association. The annual expenses are provided by membership fees, service fees, the premiums at fairs, and by government aid, the latter amounting to an annual average of about $40 for each association bull and $67 for each cow-testing association that conforms to certain regulations prescribed by the government as a condition to receiving state aid. In 1909, the Danish government appropriated $136,000 to assist the breeders' and cow-testing associations.

In 1909, there were in Denmark 270 horse-breeding societies with 21,500 members, 1259 cattle-breeding societies with 31,300 members, 253 pig-breeding societies with 6430 members, and 102 sheep-breeding societies with 850 members; receiving in total about 400,000 crowns from the state. In Germany there were 2000 coöperative dairy societies in 1908 with a quarter of a million members, and a large number in Austria, England, and other European countries. The influence of the cattle breeders' associations on the Danish dairy industry is set forth by Rasmussen[1] as follows: —

"1. By organization and coöperation it became possible for the smaller farmers to obtain a rapid improvement in their herds, which otherwise would practically have been impossible;

"2. They have constantly and forcibly demonstrated to the farmer the value of a pure-bred bull of recognized family in the improvement of the herd;

---

[1] Bulletin 129, Bureau of Animal Industry, U. S. Department of Agriculture, Cattle Breeders' Associations in Denmark.

"3. The herd books and records kept by the association have taught the farmer to appreciate the value of a pedigree in the selection of breeding animals;

"4. By coöperating with the cow-test associations and agricultural societies it has become possible to employ many cattle experts, who not only have acted as educators and advisers, but to whom is due the credit for the uniform and systematic way in which this work is carried on throughout the country.

"The important part played by the breeders' associations in the improvement of cattle is quite noticeable at the fairs and shows. A few years ago the greater portion of the animals exhibited, especially bulls, belonged to individual farmers owning large herds. To-day, not only do more bulls in the show rings belong to the breeders' associations, but these most frequently carry off the highest honors. By means of these associations, a large number of the smaller farmers who could not afford to keep or buy a high-priced bull for a few cows have had an equal opportunity for improving their herds, as well as equal chances at the shows, with the farmers who own the large herds. Furthermore, they have added greatly to the interest taken in the shows and fairs, as each member of an association takes a personal interest and pride in having his association bull successfully meet the often very keen competition."

Coöperative Cattle-breeding in the United States

The coöperative breeding method is beginning to be applied to a limited extent to the improvement of breeds in the United States, especially in Wisconsin, and to a small extent in other dairy states. In the state of Maine, there are several coöperative breeders' associations formed around the pure breeds of cattle and also for the purpose of developing a better high-grade dairy stock.

In Wisconsin. — In 1910, Humphrey[1] gave an account of thirty-one community associations in Wisconsin, including more than one thousand breeders, organized to produce and improve high-grade and pure-bred dairy cattle and to establish a reputation for a community as a breeding center. The first organization was formed in Wisconsin in 1906, when a dozen young men formed what is now known as the Waukesha Guernsey Breeders' Association.

It is the object of each association to produce and improve high-grade and pure-bred cattle of the breed around which they are organized. The cows of each member are bred to pure-bred bulls of the breed represented by his association. Each member is to care for his herd in the most approved manner; he must coöperate with the members in the purchase and use of the pure-bred bulls, in the sale of surplus stock, and in the promotion of the dairy interests of his community. These associations keep a herd register in which the animals of each member are entered. They adopt methods of protecting the members against fraud and against the spread of disease among the cattle, such as contagious abortion. They adopt coöperative methods of insuring the bulls, and they seek aid from the state and federal governments in the general promotion of their object. These organizations may also act as agents for the members in buying feed and other supplies. They may assist in the distribution of farm crops, develop markets for the stock and products by advertising, and develop better business methods for the individual in a variety of ways.

---

[1] Bulletin 189, Community Breeders' Associations for Dairy Cattle Improvement, the University of Wisconsin, Agricultural Experiment Station.

It has been the experience in Wisconsin that an association should not be too large. Rather there should be an association for each breed in each community, or at least in each county. The formation of a number of associations leads to a healthy rivalry among them that is a distinct advantage to the dairy industry. These associations may be federated as they are in European countries.

Coöperative cattle-breeding by the federal government, the state, and the farmers in Minnesota. — In Minnesota, the coöperative breeding of milking shorthorns was undertaken in 1907 by the United States Department of Agriculture and the Minnesota Experiment Station in coöperation with the owners of ten herds of shorthorn cattle. The aim of this effort is outlined by Handschin[1] as follows: —

"First, the reëstablishing of profitable milking qualities in the shorthorn, combined with the conformation and ability to lay on flesh and make a good beef carcass when the animal is sent to the block.

"Second, the working out of a practical system of coöperation and community breeding that can eventually be adapted to all classes of live-stock and make progress in animal breeding more rapid and sure through the following means: —

---

[1] "Coöperative Breeding of Milking Shorthorns in Minnesota," by W. F. Handschin, of the American Breeders' Association, Vol. 6, p. 301.

"By reducing the cost, where the herds are small and conveniently located, by using sires jointly;

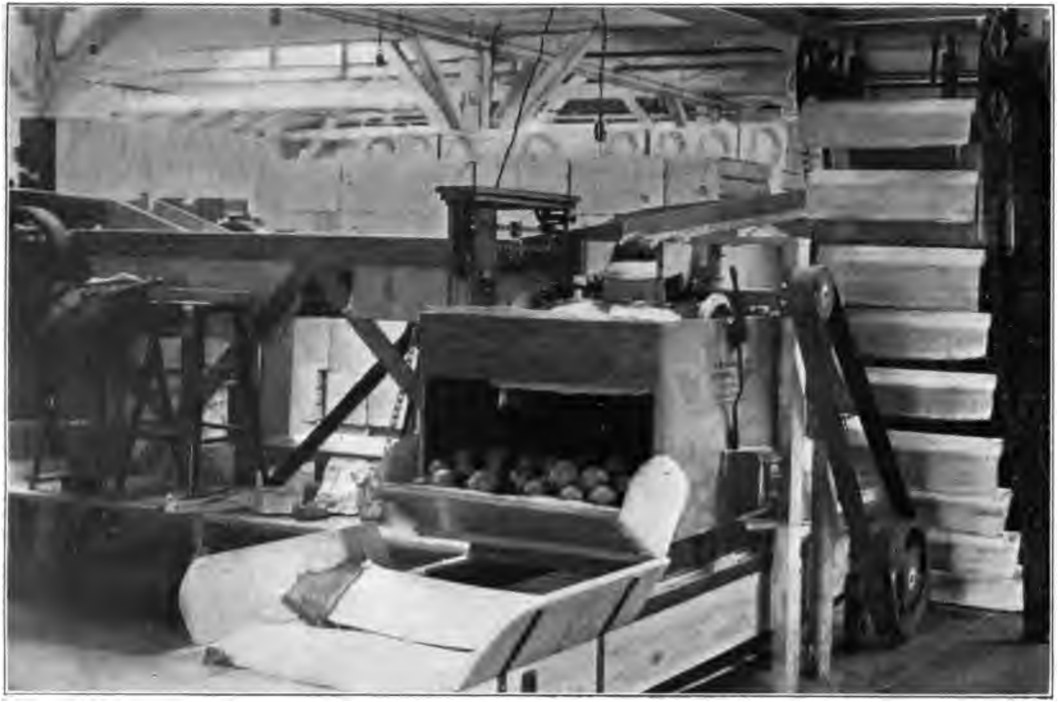
"By making the most of the comparatively few high-class sires that are produced in any breeding project;

"By conserving the proven sires and using them as long as they can do service, changing them from one group to another to prevent unwise close breeding;

"By creating community centers in certain classes or breeds of pedigreed live-stock and attracting buyers to these communities, thus insuring better markets for the animals produced."

The Minnesota plan, which may also be applied to the different kinds of animal-breeding, is of interest in showing the method that has been adopted there to bring about practical coöperative breeding work. The United States Department of Agriculture, the State Experiment Station, and the owners of the herds have formed an organization known as a circuit council. This council is composed of one representative from each of these organizations. It has charge of the breeding operations, and it devises means for raising funds to purchase sires outside of the organization. The council employs a specialist who visits each herd in the circuit at least once a month for the purpose of testing the cows for milk and butter-fat, to assist in the selection of the breeding animals, and to give the owner expert advice in every possible way, the members agreeing to follow the directions of the expert when approved by the council. The Department and the Experiment

PLATE VI. — Electrical Orange Weighing-machine. Chapter IV.



Station defray the expenses of the Circuit Council, and the salary and expenses of the expert. They also secure information as to where suitable breeding animals can be found and advice in the selection of the animals. They defray the cost of transportation of the sires that are purchased, and the cost of transferring bulls within the circuit in order that the exchange of desirable sires may be encouraged. They also furnish the apparatus and instruments necessary for testing the cows for milk production and butter-fat. The owners of the herds agree to provide at least five cows from families having good milking records, and to purchase one or more bulls, subject to the approval of the council.

The plan is further elaborated by Handschin, who says: —

"The president of the association, together with a representative of the United States Department of Agriculture, and a representative from the State Experiment Station, constitute the executive council, which makes all necessary regulations regarding the purchase, sale, mating, selection, and management of animals on the circuit.

"The executive council also employs a circuit superintendent who, under the direction of the council, advises and directs the general management of the herds, keeps records of feed consumed, milk produced, and breeding power of the animals in the circuit.

"The circuit superintendent spends two days a month with each coöperator. During this time he weighs the milk produced by each cow, and takes a composite sample from which butter-fat determinations are made. From these, and the record of daily weights kept by the coöperator, the annual records of milk and butter-fat production are computed.

"The general plan of operation is to list all cows of desirable conformation and bred along milking lines. Using the yearly records of production as a basis of selection, all cows that do not milk profitably are discarded. All cows listed are bred to sires owned by the Experiment Station. These have been selected from herds that have been systematically bred and selected for a combination of profitable dairy production and a desirable conformation from the beef standpoint. That is, they are the produce of dams that have yearly records of from 10,000 to 18,000 pounds of milk and 400 to 600 pounds of butter-fat, and combined with this the ability to lay on flesh when dry and attain weights from 1400 to 1600 pounds when in good flesh. What the breeding power of these sires will be, cannot be foretold at present. The two crops of calves on the circuit are a promising-looking lot.

"All heifer calves from approved dams are raised and will be tried out at the pail when they come into milk. The bull calves are raised to 8 to 10 months of age, when they will be divided into three classes : reserved, approved, and rejected. All of those rejected will be sold for slaughter, those approved will be sold to breeders in the usual way, and those reserved will be kept for use on the circuit. The sires reserved for the circuit may be offered for sale to other members of the association, used to supply the new-herds taken into the circuit, sold to outside breeders with options to repurchase, or 'farmed' out to approved breeders until needed on the circuit. In this way all of the best females are kept on the circuit, and all of the good sires produced are kept available at any time in case their individual development or the performance of related animals warrant using them.

"The Experiment Station also maintains a small herd of which complete records have been kept since 1907. Their annual production has ranged from 6000 to 8400 pounds of milk and 200 to 320 pounds of butter-fat.

"Two years' records of production are now complete for the other herds on the circuit. They have ranged from 4500 to 9000 pounds of milk and 150 to 400 pounds of butter-fat. The increased yields during the year just closed for the outside herds indicates that with better management the average production for the whole circuit will be materially increased.

"Up to date about 35 cows which are considered good enough for foundation stock have been selected. Judging from performances to date, they should make from 6,000 to 10,000 pounds of milk and 200 to 400 pounds of fat, with good care.

"Most of them milk persistently for 9 to 10 months or within 2 months or less of calving. These cows range in size from 1200 to 1500 pounds when mature. Some of the best milkers that have had to be discarded for non-breeding or other causes have sold at 4 to 5 cents per pound and brought from $60 to $65."

THE RULES OF THE CIRCUIT COUNCIL

The rules of the circuit council are as follows: —

"1. Circuit animals shall be divided into three classes, as follows: —

"(*a*) Certified animals, authorized to be used in breeding within the circuit.

"(*b*) Registered animals, not entitled to use in breeding within the circuit, but recommended for registration in the American Shorthorn Herdbook.

"(*c*) Disqualified animals, of inferior individuality or breeding and not worthy of use for breeding purposes.

"2. All animals classified as certified or registered animals shall be registered by breeders in the American Shorthorn Herdbook at their own expense.

"3. Disqualified animals shall be sold for slaughter only.

"4. Bulls shall be purchased by the individual members of the Association as needed and subject to the approval of the circuit council. Such bulls shall be retained by the purchaser only as long as desired for use on cows entered in the Association, and members of the Association shall have a 15-day option on all such bulls at not to exceed the original purchase price before sale can be made outside of the Association.

"5. No bull in the circuit shall be used on cows outside the circuit.

"6. No bull shall be used to excess.

"7. No service fee shall be charged for any bull in the circuit.

"8. No animal or animals shall be entered or used in the circuit which have reacted to the tuberculin test made by a competent veterinarian.

"9. All cattle on farms whose owners desire to enter the Association shall be tested for tuberculosis by a competent veterinarian, and no one shall be allowed to enter the Association until such test shows his cattle to be free from tuberculosis.

"10. No tuberculin shall be injected at any time into cattle in the circuit or covered by the provisions of Rule 9, except by an official veterinarian appointed by the circuit council.

"11. No febrifuge shall be administered to cattle tested for tuberculosis under these rules for ten days before or ten days after such test.

"12. The circuit council will drop summarily any coöperator attempting in any way whatsoever to render the tuberculin test ineffective, by injecting tuberculin, giving febrifuges or by other means.

"13. No animal shall be sold outside the circuit without the consent of the circuit council.

"14. The circuit superintendent (*a*) shall not be a member of the circuit council; (*b*) he shall have no financial interest in Shorthorn cattle; (*c*) he shall have full charge under the agreement between the Secretary of Agriculture, the Director of the Minnesota Experiment Station, and the Coöperative Circuit Association, shall, in consultation with the owners of the animals, direct all matings of circuit animals and the rotation of bulls throughout the circuit; (*d*) he shall keep in touch with the work by regular and frequent visits to each herd in the circuit, according to instructions of the council; (*e*) all his books, records, and accounts shall be open to the inspection of the council and the members of the Association; (*f*) he may employ experts with the approval of the council; (*g*) his headquarters shall be at the Minnesota Experiment Station, St. Anthony Park, Minn.; (*h*) he may be removed at any time by a unanimous vote of the circuit council.

"15. The circuit council, by a unanimous vote, may drop members from the Association, or add new members; such action to be subsequently ratified by three-fourths of the members of the Association present at any regularly called or annual meeting.

"These rules may be amended by an unanimous vote of the circuit council, subject to ratification by a three-fourths vote of the members of the Association present at any meeting."

Coöperative Horse-breeding

The coöperative method is adapted to the improvement of the breeds of horses, or to the development of high-grade horses. There has been little coöperative horse-breeding work done in the United States. There are many instances in which groups of farmers have purchased stallions for the use of members, but these organizations have rarely been formed on the coöperative plan.

The way to improve the horses of a community is first to decide which breed and type of horse suits the locality and the requirements of the farmers best, and then breed only the best mares to a good, sound, pure-bred stallion. The farmers of a community, representing the ownership of seventy-five to eighty mares, can join together and organize on the coöperative plan to purchase a stallion, each member paying his share of the cost in proportion to the number of mares to be bred by each. The association then sends a representative to a stock farm abroad or in the United States to select the stallion. The stallion is taken care of by one of the members of the association. Under this system, the farmers of a community can secure a pure-bred stallion of the desired breed at a lower cost than under any other method.

The company system of horse-breeding. — The purchasing of stallions for community use has been adopted to a very large extent in the Central West and in the extreme western states, especially in California. The method commonly followed is known as the "company system." It consists of the organization of a group of farmers by a dealer or company and the subsequent sale of a stallion to the organization. The system is described by Rommel,[1] who in contrasting it with the coöperative system of ownership says: —

"The company system of selling stallions used by many importers and breeders is applied in the opposite manner. A representative of a stallion owner visits a community and himself proceeds to organize a company. He frequently associates some prominent man with him, giving him a share of stock for his influence. When sufficient men come in to cover the selling price of the stallion at the fixed price for shares, each member gives his note for the amount represented by his share, the agent discounts these notes, and the horse is sold. It is an unfortunate thing that this company method of selling stallions is used. Many horsemen condemn it strongly, even though they may use it. Its existence is condoned on the plea that if it were not used the horses would not be sold; that the horse must be taken to the buyer, because the buyer will not go to the horse. That may have been true in the Central West several years ago, and it may be true in some parts of the South to-day, but in this day of tremendous prices for horses of all kinds it seems strange that a really good horse cannot be sold on its merits.

---

[1] Circular 124, Bureau of Animal Industry, U. S. Department of Agriculture, "Suggestions for Horse and Mule Raising in the South," by George M. Rommel.

"The decline of the company system of selling in the corn belt is being followed by the adoption of the public sale by some breeders, and the firms that use the company system most extensively are carrying it into the South and far West, where less experience has been had with it. There is little doubt that the people of these sections, too, will soon find out the faults of the system, and we can look forward to the time when it shall have passed from us forever. The objections to the system are its expensiveness and general unreliability. To send an agent into the field for several weeks to sell one horse (and often the horse is with him, and a groom also), to pay this agent's commission and the discount on the notes, piles up a tremendous expense bill, which must be added to the cost of the horse and paid by the purchasers. Stallion owners estimate that it costs on an average about $1000 to sell a stallion by the company system. A home-organized company could send a man to Europe for a horse at a smaller expense than that.

"The unreliability of the system rests on the fact that, under the law, firms are liable for the acts of their agents only when agents act within the limits of their authority. If a firm wishes to do so, when a purchasing company finds an agent's promises of no value, it can retire behind the excuse that the agent exceeded his authority. However, there are, no doubt, more honest agents than dishonest ones, just as there are more honest stallion owners than dishonest ones.

"The element of unreliability is of course not always present in the sale of a horse by the company system, for the representations of an honest agent of an honest firm can be depended on to the letter. But no firm can sell a horse in this way without great cost to the purchasers, in many cases more than the horse is really worth, and in most cases more than the shareholders can ever hope to get out of their investment. The system has one great merit, namely, that it is taking many good horses into sections of the country where they are sorely needed, and probably the value of such horses to a community will be equal in the long run to the price paid for them, although this may not show in the books of the companies which purchase them."

COÖPERATIVE CROP IMPROVEMENT

In recent years, a great deal has been said about the improvement of farm crops by breeding and selection. Those who have been working along these lines are a few individual plant-breeders, the colleges, the experiment stations, and the departments of agriculture. Their object has been to establish the principles which govern the improvement of crops and to develop seed of improved varieties that will produce increased yields, or that are superior in some other way to the varieties now commonly grown.

It is well understood by seed-growers that a variety can be kept true only by the most rigid selection of seed from plants that approach the ideal type. Varieties of corn usually run out in seven or eight generations unless the seed is selected with great care. On the other hand, the yields of the standard varieties may be increased; hardy, prolific, and disease-resistant types may be developed with local adaptations to soil and climate, and other desirable characteristics may be perpetuated by the use of selected seed from plants which are similar to the type desired.

Besides the study of the principles of plant improvement, the public institutions have done much to increase the value of the staple farm crops by the development and wide distribution of seed of improved varieties. Private individuals have also done a large amount of this work, and associations have been organized for the development of seed-breeding and for the improvement of farm crops through the systematic use of seed of improved varieties. As an example of the practical seed-breeding work of a public institution, the Kansas Agricultural Experiment Station, in coöperation with the United States Department of Agriculture, has produced improved strains of wheat, corn, and other crops, and from 1908 to 1910, according to Professor Ten Eyck, has distributed more than 25,000 bushels of well-bred seed of standard crops, including 15,000 bushels of seed wheat, 3000 bushels of seed corn, 2000 bushels of seed oats, barley, and emmer, 2000 bushels of kaffir corn and broom-corn, and smaller quantities of other seeds. The improved strains of seed are developed on the college farm at Manhattan and on the substation farms, the seed is either distributed or sold to the farmers, and the station encourages them to continue to improve the varietal strains by further selection and care. It coöperates with the farmers who receive the seed by making a list of those who have "college-bred" seed for sale and by distributing the lists throughout the state. The crop breeders who coöperated with the station in 1910 sold 30,000 bushels of seed wheat and 10,000 bushels of improved seed corn. This type of work is being developed more extensively at the county substations at the present time, and improved seed will be distributed even more widely by the Kansas Station in the future. Professor Ten Eyck estimates that from one-third to one-half of the total area planted to corn in 1911 in Kansas was planted with well-bred seed. The improvement of farm crops through the development of seed of improved varieties is still a pioneer work in the United States. It is certainly useful work, and until the principles of plant improvement and their practical application to agricultural conditions are more generally understood by the farmers, it may be a wise public policy for institutions to develop and distribute seeds that are resistant to disease, that yield prolifically, that show peculiar adaptation to local conditions, or that exhibit other superior qualities. The institutions can also lead or assist in helping the farmers produce their own superior strains of seed through individual or associated effort.

The improvement of farm crops, however, must ultimately rest with the farmers themselves. They can form associations for the purpose of developing improved seeds, adopt a plan for seed-growing and distribution, supply themselves with seed for crop production, sell the surplus, and, in the end, increase the yields of the staple farm crops, or produce crops that are superior in other ways. As farmers' organizations are developed, the demand on public institutions for work of this character will grow less; their efforts can then be directed exclusively towards the investigation of the underlying principles of plant-breeding, while the farmers will carry forward the practical improvement of crops, helped and directed by the public institutions, but working in accordance with plans which are a part of an organized farmers' movement.

Organization for Crop Improvement

The improvement of crops through the development of better strains of seed can be handled most effectively when the producers in a community who are interested in a single crop unite to improve the crop in that locality.

The local organization is the unit for local crop-improvement because the local strains that are developed usually give better results in that community than the best-bred seed of other localities. The introduced seed may give equally good or better results after it has grown two or three years in a new locality, but until it is acclimatized, a variety that has been developed in a distant place seldom equals the best locally developed strains. The plan becomes still more effective when the local associations federate into a state organization to act for the local associations in the distribution and sale of surplus seed and to assist the local associations through expert advice and direction in making their practical crop-improvement work more effective. The farmers have already organized in some states for crop-improvement purpose, the most important work having been done among the corn-growers in the Central West. This method is followed by the wheat-growers also, and by the producers of tobacco, cotton, vetch, and other farm crops. Within the limits of this work, it is not practical to discuss all of these efforts. An understanding of the movement and its relation to the coöperative organization of agriculture may be had by a discussion of the work of the breeders of corn.

Corn-breeding Associations

The first organization of the individual corn-breeders of a state occurred in 1899 in Illinois. Through the efforts of A. D. Shamel, who was studying corn-breeding at the Experiment Station, the Illinois Corn-breeders' Association was formed. Mr. Shamel says that the object of this association was to develop improved methods of seed-corn selection and distribution and to establish standards for the business of raising improved seed. He says further that several important steps were taken to draw up rules for the conduct of this business, which were generally looked upon as visionary but which have become established methods of procedure the seed-corn world over. The first was that these seed-corn breeders agreed to send out seed-corn *in the ear,* unless otherwise ordered. In this way, the customers could get a definite idea of the quality of seed purchased. It had previously been a regular practice of seed-corn supply houses to send out shelled seed, frequently of inferior quality and of doubtful origin, without much fear of detection. The importance of this step at that time can be fully appreciated only by those who lived through those pioneer days. As soon as the great seed houses realized that the movement for better seed-corn thus begun was likely to prove successful, they began a campaign of attack that would have dismayed individuals working alone, but did not deter this coöperative body of independent men. Many unscrupulous seed-corn men were forced out of business as a consequence of the revelations brought out by the discussions then awakened in farmers' institutes, in agricultural papers, and at corn shows, corn clubs, and in other meetings. The business of these seed-corn breeders increased by leaps and bounds. Ordinary seed-corn that sold at 75 cents per bushel was replaced by improved seed at $2.50 per bushel, while many of the breeders of the improved strains cannot now supply the demand at $5 to $10 per bushel. The Illinois association developed methods of preserving and improving the established types that were adapted to particular soils and climatic conditions by continually selecting the seed to a standard type and by detasseling the plants of these types to prevent self-pollination, and by a rigid selection of seed ears for planting. The association encouraged the holding of corn shows, and furnished experts to judge the displays. It held annual meetings for a general discussion of the results of the year and for the consideration of new plans of work.

The Illinois Corn-breeders' Association has been followed by the starting of many similar movements among the corn growers and the growers of other crops in different states. The state organizations have sometimes formed societies among the growers for local crop improvement, the membership of fifty local and county corn improvement associations affiliated with the Ohio Corn Improvement Association numbering more than twenty-three hundred. According to C. P. Hartley of the United States Department of Agriculture, state corn-growers' and corn-breeders' associations had been organized in 1911 in Connecticut, Delaware, Illinois, Indiana, Iowa, Kansas, Maryland, Missouri, Minnesota, Nebraska, Ohio, Oklahoma, Texas, and Wisconsin. The immense increase in the yield of corn in recent years in the Central West is attributed primarily to the use of better strains of seed that have been developed and grown and sold by the members of the corn-breeders' organizations. In Iowa, the members who are most prominent in the corn-improvement associations are those who have been active in the agricultural short courses, the farmers' institutes, and the grain-judging contests. The secretary of the Iowa State

Association, W. L. Bowman, says: "The corn of this state has been indeed developed very much in the last five or six years, since so many of our members have taken an active interest in corn-breeding. A few years ago it was almost impossible to buy a carload of yellow corn or a carload of white corn, but to-day a person can buy a whole trainload of these types, due to the fact that our corn-growers have appreciated the advantages of having pure breeds of corn."

Plans of the Illinois Corn-breeders' Association. — The Illinois Corn-breeders' Association is composed of those persons engaged in the growing of pure-bred corn on land worked by themselves, or under their control during the preparation of the soil, the planting, cultivating, and harvesting of the crop. The principles of the organization are suggestive and are given in detail to show the direction which an organization of this type may take. As set forth in the constitution and by-laws, the object of the association is: —

"First. To establish distinct types and breeds of corn.

"Second. To encourage and promote the growing of pure-bred corn for seed purposes throughout the state of Illinois.

"Third. To perfect new and better methods of growing and breeding corn in order to influence desired characteristics.

"Fourth. To protect the farmer who shall desire to purchase pure-bred seed by furnishing information such as will instruct him in distinguishing the breeds of corn and giving him the names of reliable growers.

"Fifth. To aid in the procuring of such legislation or in doing any other acts as shall protect the growers of pure-bred corn in their efforts to furnish the farmer with seed-corn of the breed desired.

"Sixth. To establish a score card for each recognized standard variety of corn."

The rules and regulations of the association are as follows: —

"Rule 1. Members of this association may sell seed-corn either on the ear or shelled, as ordered by the purchaser, but the germination test must be the same whether shelled or on the ear.

"Rule 2. No member of the association shall sell or offer for sale any corn for seed purposes other than is grown by himself or under his direction and for seed purposes, and the type, variety, and quantity must be reported to the secretary of the association not later than the second Wednesday in December of each year.

"Rule 3. Each member of this association shall conduct his business of corn-breeding and selling of pure-bred seed-corn in such manner only as shall be for the elevation of the reputation of the association as a means of accomplishing the object for which it was organized.

"Rule 4. Each member shall properly test the vitality of the seed-corn he offers for sale, and if less than 90 per cent germinates he shall not offer it for sale."

The methods of corn-breeding practiced by the members of the association are as follows: —

1. SELECTION OF SEED EARS

"(*a*) Every ear of corn to be considered as a possible seed ear for the breeding plot must be selected in the field and with special reference to the character of the individual corn plant upon which it is produced.

"(*b*) Every ear which is ultimately selected for the breeding plot must conform as nearly as possible in appearance and physical measurements to definite and desirable standards.

"(*c*) If the seed-corn is selected by mechanical examination only of sections of kernels for improvement in composition, the efficiency of the selection shall be determined by the chemical analysis of at least two composite samples, of which one sample shall represent all selected ears which are planted in the breeding plot, and the other sample shall represent all ears which are rejected by the mechanical examination.

"(*d*) If the seed-corn is selected by chemical analysis for improvement in composition, the composition must be determined of each individual seed ear which is planted in the breeding plot."

2. THE BREEDING PLOT

"(*a*) The breeding plot shall contain at least 25 rows of corn which are at least 100 hills long.

"(*b*) Each separate row of corn in the breeding plot shall be planted with a separate individual ear.

"(*c*) All rows, which show, as a whole, marked inferiority and also every individual corn-plant which may show marked inferiority, in whatever row it may be found, shall be carefully detasseled before the pollen matures.

"(*d*) The performance record of each individual field row shall be determined, and this shall include an accurate determination of the total weight of ear corn which the row produces."

3. SELECTION OF SEED ROWS

"(*a*) The selection of seed-corn for the next year's breeding plot shall be confined to 40 per cent of the field rows; that is, at least 60 per cent of the field rows must be rejected as a source of seed for the breeding plot.

"(*b*) The selection of the individual field rows from which seed-corn may be taken shall be based upon the performance record of the row as a whole, but with special reference to the yield of corn which the row produces, which in all cases must be ascertained by computation from at least 100 consecutive hills and without rejecting vacant hills.

"It is the intent of this association that its members shall be actual breeders or improvers of corn and not mere growers or producers of seed. While methods may vary somewhat as to detail in accordance with the ideals of the individual members, in their breeding operations, certain well-established principles are recognized, fundamental among which are the following: —

"*Every individual corn plant is possessed of a distinct individuality which corresponds to the individuality of animals.*

"For guidance in conducting the breeding plot, certain recommendations founded upon these well-established principles are here given as being advisable to follow."

Ear Row Breeding Plot.

"Seed ears of desired type and quality should be tested by planting each in a separate row in the plot in order to prove its productivity as well as to test the transmission of other characters."

Size of Breeding Plot.

"The larger the number of ears included in this plot, the better it will be. This is on account of two reasons, first, for the sake of affording as great a range of selection as possible; and second, to avoid future detrimental effects of in-breeding resulting from the establishment of too close relationships.

"A system of 96 rows is recommendable as explained in Bulletin No. 100 of the Illinois Agricultural Experiment Station. As regards length of rows it may be said that in general the longer the rows, the better the test. Rows at least 100 hills long are recommended."

Registration.

"In order to keep the pedigree, each seed ear should be given a register number to correspond to the row in which it is planted. For the sake of obtaining all possible information regarding the connection between type of ear and productivity in each of our varieties, it is well to record at the same time some description of each seed ear. This may include such data as size, weight, number of kernels, notes concerning type of kernel and of ear, etc."

Performance Record.

"At harvest time the performance record of each row should be determined by weighing the total amount of ear corn produced. This performance record may well include other desirable points such as number of ears, or notes regarding type or special qualities.

"This record forms the basis for future selection. It is recommended to confine the selection to one-quarter or a smaller proportion of the total number of rows tested."

Detasseling to Prevent In-breeding.

"For the sake of preventing in-breeding it is recommended to detassel all the plants either in every alternate row, or in case the rows are long enough, in one-half of every row at alternate ends, taking seed only from such detasseled plants."

Multiplying Plot and Commercial Yield.

"In order to increase the seed, a multiplying plot should be planted in which the seed used shall come only from the selected rows of the breeding plot. The commercial field should be planted from only the best obtainable seed produced in the multiplying plot."

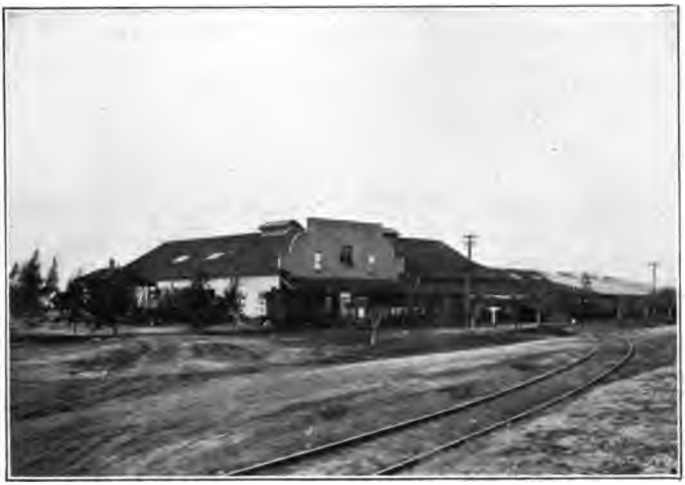
This kind of local coöperative effort should be applied to the improvement of all kinds of farm crops. An association for crop improvement is easy to effect; it can be made the nucleus for the discussion of various agricultural matters, and the center for various efforts to build up a better country life. Organizations that are formed by the farmers to bring about better business conditions do not always lend themselves as a center for the improvement of the social and educational conditions surrounding an agricultural community. A crop improvement association is founded partly on educational principles, and the greatest advantage of coöperation in the upbuilding of a community naturally results from efforts of this kind.

CHAPTER VII

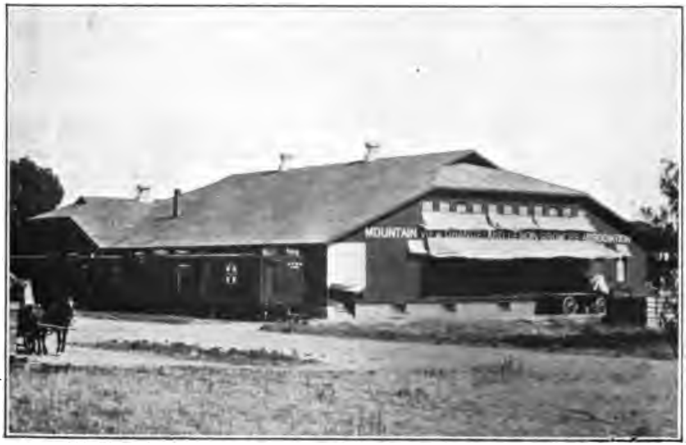
COÖPERATION IN THE HANDLING, DISTRIBUTING AND SALE OF FARM PRODUCTS, AS ILLUSTRATED IN GRAIN, DAIRY PRODUCTS, EGGS, AND COTTON

The handling, distributing, and marketing of farm products through coöperative associations is more highly developed than any other form of agricultural coöperation. Hundreds of associations have been formed to standardize the harvesting, handling, grading, warehousing, distributing, and selling of farm products, to prevent disastrous competition by bringing about an equitable distribution of the product throughout the country, and to handle the products in other ways collectively rather than individually. These organizations, which are more numerous in the Central West and Western states, may also be engaged in some phases of coöperative production and in the coöperative purchase and sale of supplies. The handling, distribution, and sale of farm products have been organized most extensively in the dairy industry around the coöperative creameries and cheese factories; in connection with the coöperative grain elevator companies in the Central West; and among the fruit-growers, especially in California, the Northwestern states, and other irrigated districts. The coöperative method is also developed to a greater or less extent in the cotton industry, in the rice

PLATE VII.—Types of Citrus Fruit Packing-houses. Chapters IV, VIII.



LEMON AND ORANGE PACKING-HOUSE. RIVERSIDE, CALIFORNIA.



LEMON PACKING-HOUSE. UPLAND, CALIFORNIA.

and tobacco industries, among the vegetable growers in the West and Southwest and, to some extent, in the Eastern states. The coöperative marketing of farm products is essentially a central-western and western movement, though organizations have been formed in different industries in nearly every state in the Union.

There has been a greater need for coöperation in the distribution and sale of farm products than in other agricultural activities. The distribution and sale of farm products has been controlled by the brokers, jobbers, commission merchants, and other distributing agencies. These agencies have often reduced the returns to the farmer to such an extent that his capital and labor have brought an inadequate return. The dealers in farm products have in many instances eliminated competition and have then dictated the price which the producer should receive for his crops. In other cases, they have divided the territory among themselves, and, like the milk distributors in some of the large cities, they have acquired a monopolistic control of the facilities of distribution and have prevented the sale of farm products by any other agency to the local dealers or to the consumers. In their plans the dealers have sometimes been helped by the transportation companies, the private car lines, and the auction companies, and other abuses and discriminations have crept in and have forced the farmers to organize to meet these conditions and to protect their own interests, the individual farmer acting by himself being helpless in the face of them.

It is not possible in this work to discuss all of these unifying tendencies in American agriculture. The principles that underlie the efforts of the farmers to handle and sell their crops through coöperative associations will be set forth in connection with the grain, dairy, eggs, cotton, and horticultural industries (the last subject in Chapter VIII).

THE FARMERS' COÖPERATIVE GRAIN ELEVATORS

In 1911, there were nearly eighteen hundred farmers' grain elevator companies in the United States, distributed approximately as follows: Iowa, three hundred and twenty-seven; North Dakota, three hundred and fifteen; South Dakota, two hundred and twenty-two; Minnesota, two hundred and sixty-six; Illinois, two hundred and thirty-five; Nebraska, one hundred and ninety-three; Kansas, one hundred and twenty-six; Wisconsin, thirty-eight; Oklahoma, thirty-three; Indiana, twenty-four; Michigan, twenty; Washington, eighteen; Montana, sixteen; Ohio, fourteen; Texas, five; Colorado, four; Oregon, three; Missouri, three; Arkansas, two; Idaho, one; and Kentucky, one. These elevators cost from $3000 to $25,000 each. The membership in an association averages about seventy to two hundred and twenty-five.[1] The output of the large elevators usually varies from 40,000 to 100,000 bushels of grain, some of the largest handling a million bushels. The smaller elevators, holding from 20,000 to 25,000 bushels, cost from $2600 to $3000. This means that there are not fewer than 225,000 farmers connected with the coöperative elevator associations, that their investment approximates $18,000,000, and that they handle 270,000,000 bushels of grain, or about forty per cent of the total amount shipped from the sections where the farmers' elevators have been built.

---

[1] "Coöperation among Farmers," J. L. Coulter, 1911.

The Grain-distributing System

The American grain business is stupendous in volume. The average annual production for the last three years had equaled about 117,000,000 tons, of which corn formed about sixty-four per cent, wheat sixteen and six-tenths per cent, and oats fourteen and two-tenths per cent, the remainder being distributed over barley, rye, rice, flaxseed, and buckwheat. According to data furnished by the Bureau of Statistics of the United States Department of Agriculture, twenty-two and eight-tenths per cent of the corn crop is shipped out of the county where grown, fifty-seven and seven-tenths per cent of the wheat, thirty and eight-tenths per cent of the oats, and fifty-three and one-tenth per cent of the barley. The distribution of the grain crop is conducted somewhat along the following lines: The grain is first brought from the farm to the country elevators, where it is accumulated for shipment. The elevators are owned by local grain dealers, by line-elevator companies, or by the producers. The railways may own or have an interest in the elevators. The grain is shipped by these dealers to primary markets, such as Chicago, Minneapolis, St. Louis, Kansas City, Omaha, Detroit, Duluth, and to other railway centers, where it is concentrated in enormous terminal elevators. After being scoured and blended and prepared for shipment, it is forwarded to further distributing points, such as Buffalo, to the interior mills, to the seaboard, and to foreign countries.

The Method of Selling the Grain

Formerly the farmer sold his grain to a local merchant or consigned it to a commission merchant in one of the primary markets, where it was sold to a dealer. The local merchant who bought from the farmer shipped the grain to a commission merchant or sold it to a dealer in a primary market. In the course of time, the local dealers were largely replaced by well-organized local firms which specialized in grain buying and selling, and which built elevators at the shipping points. Between 1889 and 1900, large corporations were formed in Minneapolis, Milwaukee, Kansas City, and Chicago. They built elevators along different lines of railroads and placed in charge their own buyers at the local shipping stations. Their elevators were known as line elevators to distinguish them from the elevators owned by the local grain dealers. The terminal grain corporations were also owners of warehouses in the primary markets. In several of the states, such as Illinois, Nebraska, the Dakotas, Minnesota, and Iowa, the grain dealers have organized into "Grain Dealers' Associations" to improve the conditions surrounding the grain-handling business. There is still a large amount of grain shipped direct by the farmers to commission merchants outside of the large primary markets, but a large proportion of the crop is purchased by the local grain dealers or the line-elevator companies.

Origin of the Farmers' Elevators

The farmers' coöperative elevator companies grew out of abuses in the grain-distributing system as handled by the local grain dealers and the line-elevator companies. Twenty years ago, there were from one to ten local grain buyers at each producing station. Some of the buyers owned elevators; others had no storage facilities and were known as track buyers, who loaded the grain on the car from the farmer's wagon. Competition was keen among the buyers, and the farmer received a good price for his grain, but in the end the system of free competition proved disastrous to many of the grain dealers. By 1900, the grain dealers' associations that were formed to advance the mutual interests of the members became the predominating factor in the grain business in the Central-western states. They had driven out most of the smaller dealers; they coerced the commission merchants by refusing to ship to any merchant who handled grain for an independent track buyer; they obtained the coöperation of the railroads by securing a rule under which cars were refused to a shipper unless the grain was on the right of way of the railroad at the time the car was ordered. This rule prevented the shipment of grain by the independent track buyers and prevented the consignment of grain by the farmer as well. With the independent buyers eliminated, the grain dealers' associations in the principal grain-growing states perfected their organization and dictated the price to be paid to the farmers each week by the dealers in their association. It is said that they fixed the amount of grain each dealer could buy and adopted a system of penalties which forced a dealer who purchased more than his share to pay to the association a fine varying from one cent a bushel on corn and oats to ten cents a bushel on timothy. The association paid an amount from this fund to a dealer who received less than his share. The efforts of the large grain dealers were backed by the railroads. They refused to furnish cars to the farmers who tried to ship their own grain, and often denied any other company the right to build an elevator on its property. They threw their influence with the large companies, thereby discriminating against the small shipper and producer and, in the end, brought about a condition of affairs which led to the passage of the Interstate Commerce Act, to many of the anti-trust laws, and to many of the most important national and state laws which have to do with the regulation of transportation. By 1900, the large elevator companies controlled the grain-buying business at many points. They could transact their business more economically than the small grain dealers. They had better storage facilities at the primary markets and larger assortments of grain from which to make up final grades for shipment. They forced many of the independent dealers to sell their elevators to the syndicates. Like any other unregulated monopoly, they not only fixed the price that the farmer was to receive for his grain, but they determined the amount of dockage he should be assessed and the grade into which his grain should be placed. They then paid the producer from ten to fifteen cents a bushel below the price in Kansas City or in other primary markets, after deducting the freight and a reasonable profit. The producer could not ship independently. The rule of the railroad referred to prevented it, unless he was the owner of an elevator; and, if he shipped a carload of grain, the commission merchants dared not handle it on account of the coercion of the large grain dealers. The grain producers were square against an unregulated, predatory combination of dealers who fixed the price that the farmer should receive and the conditions under which his grain should be handled and sold.

At this point, as an outgrowth of these conditions, the farmers' coöperative elevator companies were formed. The grain growers were forced to meet the competition of the commercial grain handlers by forming organizations which were equal or superior to those already in the field. The producers insisted that they should determine to whom their grain should be sold, the conditions under which it should be sold, and that the railroads should accord them the same privileges that they extended to other shippers. In 1889, the first farmers' elevator company was organized at Rockwell, Ia., where the farmers leased an elevator and proceeded to buy and sell grain. They were subjected to the most vicious competition by the grain dealers of the state. In 1900, two more companies were formed. In 1904, thirteen had been organized, and in 1911, there were more than three hundred and twenty-five of these farmers' elevator companies in Iowa. They handled 65,000,000 bushels of grain, and purchased 200,000 tons of coal, $750,000 worth of lumber, machinery, flour, feed, and other supplies used by the grain producers. The cost of operating the larger elevators varies from one-half to one per cent of the total business transacted, while the cost to the smaller elevators is about two per cent of the total volume handled, or about two cents a bushel.

The Plan of a Farmers' Elevator Company

The plan of the grain producers is simple. The farmers in a locality form a buying and selling association with capital stock varying from $2500 to $20,000. The shares of stock, varying from $10 to $100 each, are held exclusively by producers, and the amount an individual may own is usually limited to prevent the control of the association by a few individuals. These companies have usually been incorporated under the joint-stock company laws of the states. The earnings are generally distributed on the basis of capital, the dividends sometimes running as high as one hundred per cent. The articles of incorporation often provide that each stockholder may have but one vote, regardless of the number of shares that he owns. In some of the companies, the surplus is distributed in proportion to the amount of grain sold by each member, after paying a dividend of six per cent on the stock and retaining a surplus of a few thousand dollars in the treasury. Before a producer may sell his stock, the associations generally require him to offer it to the company either to be purchased or to be placed by the association. When the grain association has raised sufficient capital, it builds or leases an elevator holding from 10,000 to 100,000 or more bushels of grain. It provides that the members shall sell the grain to the association, though a member is permitted to sell to an outside firm by paying to the association one cent a bushel on every bushel sold in this manner. By this provision, the line elevators or local grain dealers can purchase from an association member, and in so doing support the farmers' associations through the refund of one cent a bushel. This rule, however, is not always legally enforceable, though the refund in most cases is paid voluntarily by the member who sells his grain outside of the association.

The affairs of the association are supervised by a small board of directors. An expert grain buyer is selected as manager at a salary of $125 to $150 per month or is paid on a profit-sharing basis. Sometimes the association is managed by one of the farmers interested in its formation. The association pays a fair market price for the grain, which is then assembled in the association elevators. Where competition is keen, the association pays the terminal market price less the freight and assesses the cost of operation against the members in proportion to the amount of grain contributed. This forces the competing elevators to handle their business without profit. From these elevators, the grain is loaded into cars and is shipped to the interior mills or to the primary grain markets, where the final grades are made and where agents of the association sell it to the terminal elevators, or ship it to the mills in the United States, to distributing warehouses in the large cities, or to the seaboard for export, though sometimes the grain is shipped direct from the farmers' elevators to the mills. Under the farmers' elevator plan, the grain grower is paid the market price for his grain, and at the end of the season, if there is a profit from the sale of the grain, receives a dividend on his stock, or the profit may be prorated on the basis of the volume of business transacted by each member. It is the usual custom of these companies to retain a surplus varying from $2000 to $5000 in order to be in a strong position to conduct the business at the beginning of the following year.

The farmers' coöperative grain elevator association usually buys grain from non-members. It then becomes a dealer in products which it handles for its own members. It may also be a purchasing agent for supplies, such as coal, lumber, and fertilizer, enormous quantities of these supplies being handled by the elevators of the Central West and the Northwest. These supplies are sold to both the members and non-members at the prevailing prices, and the profit is divided among the members at the end of the year.

There have been many failures among the farmers' elevator companies. Their management has often been attempted by men who could not handle the business successfully in competition with the experienced managers of the line companies or of the local grain dealers. Many of the associations have been loosely organized, and when reverses have been encountered, the coöperative spirit among the members has waned. Many have been over-ambitious and have branched out into other activities, such as stock-feeding and other speculative ventures. As a rule, few of the companies have succeeded unless they have confined their efforts to the distribution and sale of grain, and unless they have been managed by men who are familiar with the intricacies of the grain trade. Many of them have failed when they ceased to pay a large dividend at the end of the season. The farmer who puts his money into a joint-stock company, the form under which most of these companies are organized, usually becomes dissatisfied when his capital does not earn a liberal annual interest, unless the corporation is operated primarily on coöperative principles.

As a general movement, the farmers' coöperative grain elevators have been successful. The grain-growers have not yet developed a comprehensive marketing system, but their companies have protected the producer against the tyranny of a distributing system that held this product in its grasp. They have maintained a fair price for the farmers; they have caused the grain dealers at each shipping point to grade the grain according to its actual quality; they have increased the purchasing power of the communities in which they have been organized by keeping the profit at home rather than by paying it to the foreign elevator companies; they have created competition at the shipping points and have benefited the railroads by increased traffic.

Ultimately, the success of the farmers' coöperative elevators will depend on the federation of many of them into central organizations, that will act as a clearing house in handling the grain of each local elevator, as a part of a comprehensive distributing and marketing system. The central agencies will build terminal elevators at the primary markets where the grain of the local associations can be assembled, scoured, blended, shipped, and distributed. Up to this time, the attempts to organize these companies into central agencies have not been successful because the farmers have been unable to organize effectively enough to compete with the experienced grain dealers. The larger form of organization is a matter of evolution, and as the necessity arises, the farmers' coöperative elevator companies may be expected to overcome the obstacles which have prevented the development of a comprehensive marketing system in the past.

A Constitution and By-laws of a Farmers' Elevator Company

The following extracts are taken from the constitution and by-laws issued as a model form by the Farmers' Grain Dealers' Association of South Dakota. It is presented to show how these coöperative associations are handled. The usual provision for officers and their duties, the holding of meetings, the keeping of records, and other routine matters are included also:—

ARTICLES OF INCORPORATION

ARTICLE 1

This corporation shall be known as the ____________________ Company, and its place of business and post-office address shall be ____________________, South Dakota.

ARTICLE 2

The object of this company is to own an Elevator and such other Buildings as may be necessary, to carry on the business of buying, selling, storing, and dealing in all kinds of Grain, Seeds, Coal, Lumber, Farm Machinery and general merchandise, Livestock and other commodities that may properly belong to the interests of the stockholders of such company.

ARTICLE 3

The capital stock of this company shall be ________________ Dollars, divided into ____________ Shares of the par value of ______ Dollars each.

ARTICLE 4

The officers of this company shall be a President, Vice President, Secretary, Treasurer, and a board of __________ directors, three of whom shall be the President, Vice President, and Secretary as above named; also a manager who shall be selected and hired by the Board of Directors. The Treasurer may be selected outside the company, or the Secretary and Treasurer may be one and the same person.

Article 5

Surplus earnings may be divided not to exceed ______ per cent on the paid-up capital stock, and the balance may be divided among the stockholders according to the amount of business furnished the company, as may be provided in the by-laws.

Article 6

Each stockholder shall be entitled to one vote for each share of stock held by him; except that no stockholder shall be entitled to more than ______ votes, as provided for in Second subdivision of Paragraph 7, Section 1, Chapter 264, Session Laws of 1909.

P.S. The above article may be incorporated in the articles of incorporation if a limit of votes is desired.

By-laws

Any person twenty-one years old and over, shall be eligible to become a stockholder in this association upon making application for one or more shares of stock, not to exceed ______ shares, at the par value of ______ dollars each, under such rules and regulations as the Board of Directors may provide; and that such applicant agrees to conform to all the rules and regulations as provided for in the by-laws then existing, or that hereafter be adopted; and that he will not sell any such shares to any person, until he has offered them for sale to the company at their par value, and the company has refused to purchase same.

All stock shall be liable for indebtedness to the association, and shall not be transferred while the register holder thereof is indebted to the association in any manner. This section may be printed on the back of all stock certificates, as a notice to would-be purchasers to acquaint themselves with the provisions or the by-laws before buying.

Any stock purchased by the association shall be sold by it before any new stock is issued, and until sold shall be carried on its books as part of the assets.

The Board may borrow money for the purpose of conducting and carrying on the business of the association. They may appoint an attorney for the association, also such agents or other representatives, and employ such persons as may be necessary to properly carry on its business. All such appointments shall be subject to the pleasure of the Board as to the time of employment and compensation.

The grain buyer or agent shall have charge and management of the elevator and all lines of business that may be taken up by the association; he shall make weekly or monthly reports to the Secretary as the Board may require, shall furnish such bonds as the Board may require, and shall turn over to his successor all moneys, books, and other property belonging to the association. He shall receive such compensation as the Board may provide.

Any speculation on the part of the manager is forbidden, such as dealing in options, further than hedging against stored grain shipped out. And at no time shall any option be bought or sold only in case the cash grain is actually represented.

The election of the Board of Directors must be by ballot; any other business may be transacted by an Aye and Nay vote, each stockholder being entitled to one vote for each share held by him; unless otherwise provided in the Articles of Incorporation, proxies may be allowed upon a majority vote of the members present.

Dividends. — The Board of Directors shall have power to declare dividends from the net earnings of the association not to exceed ———— per cent on the capital stock actually sold, provided that no dividends shall be declared in excess of the net earnings of the association after deducting all losses and expenses, and it shall be the duty of the Board to carefully estimate the value of all real estate and other property owned by the association, charging any depreciation to be charged off before declaring any dividends; and provided further: that should there be any surplus of the net earnings after said dividends are paid and the amount of surplus carried to account, the balance shall be divided (*pro rata*) among the stockholders according to the amount of business each may have furnished the company; provided, however, that the business of one year shall not affect the business of another.

The accounts of the different lines of business handled by the company shall be kept separate, also the accounts of each stockholder shall be kept separate.

The by-laws may be amended by a two-thirds vote of all stock sold at any annual meeting, or at any special meeting called by the Board for that purpose, after notice having been given as provided for in these by-laws.

COÖPERATION IN THE MANUFACTURE OF BUTTER

There has been a larger movement among the dairy farmers to handle their business along coöperative lines than in any other branch of American agriculture. There were nearly 6300 creameries and 3846 cheese factories in the United States in 1911. According to the records of the Dairy Division of the United States Department of Agriculture, 2120 of the creameries, or 33.6 per cent, and 349 of the cheese factories were organized by the farmers as coöperative institutions. The largest number of coöperative creameries are located in the Central and Northern-central states. In Minnesota, there were six hundred and eight coöperative creameries in 1910; in Wisconsin, three hundred and forty-seven; in Iowa, three hundred and thirteen; in Michigan, one hundred and one; in Indiana, seventy-seven; in Illinois, fifty-five; in New York, one hundred and eighteen; in Pennsylvania, ninety-two; and fifty-nine in Vermont. Of the coöperative cheese factories, two hundred and forty-four were in Wisconsin, twenty-four in Minnesota, and thirty-nine in New York.

In former years, butter-making was a part of the duties of the household. The milk was set in pans in the cellar, the cream was skimmed off and was converted into butter in hand churns. Later on when various kinds of butter-making machinery had been devised, the butter factory and the modern creamery were successively organized. At first the milk was taken to the creamery by the farmers or was gathered from them by collectors in the employ of the creamery. There it was run through a separator and the butter-fat removed, or the cream alone was delivered to the factory, where it was made into butter, the skimmed milk being returned to the farm to use for feeding hogs. The butter was usually sent to a commission merchant. The modern creamery is generally a well-organized and well-equipped factory operated by well-trained, skillful men. It is no longer a hit-and-miss operation. It requires a knowledge of chemistry, bacteriology, sanitary science, and the application of this knowledge to the details of butter-making. Under no other conditions can a modern creamery succeed.

A creamery should include the produce of 400 to 600 cows to insure its successful operation as a business enterprise. It is better still to have a thousand cows registered in its membership, because the economy of operation and the success in the distribution of the product increases with the volume of business. Many creameries have been formed with fewer than 400 cows, but it is an exception to find one of this size that is successful.

A creamery is usually formed as a stock corporation for pecuniary profit or it may be formed as a coöperative enterprise. When organized by a group of dairymen, it may take either of these forms, though most of the farmers' creameries in America have been formed as stock corporations with certain coöperative features included. The country creameries are usually owned by an individual creamery man or by the farmers in the community in which it is located. There are also many large creamery corporations formed to purchase cream and butter-fat from the farmers and to distribute the product to the wholesale and retail trade, the profits from the finished butter going to the creamery company rather than to the producer.

Organization of a Creamery

In organizing a farmers' creamery, the first step is to determine the number of cows within a few miles of the proposed plant from which the cream can be obtained. When one-half of the amount needed is pledged by the farmers, the creamery is then to be made a legal corporation. Shares of stock should be sold to as many farmers as possible at $25, more or less, per share, and, to provide against the creamery falling into a few hands, no one farmer should be allowed to own more than a limited number of shares. The creamery may be organized as a non-stock corporation along the lines already described for corporations of this character. This method is the usual one in the Danish and French creameries, the original funds needed to build a factory being borrowed from a bank and paid off in installments. The Danish system of financing is described by Fay[1] as follows: —

---

[1] "Coöperation at Home and Abroad," pp. 168–169.

"The original funds for the equipment of the dairy are borrowed from a private bank and repaid by installments. The working capital is provided by a premium of (say) 15*s*. per cow owned, on which no interest is paid. When the original loan is paid off, a new loan is taken out from the bank at the same rate of interest, and is charged upon the working expenses of the society, including both original and new members. The money thus obtained is handed over to the original members, and then all alike proceed to pay off the new loan; and so on through an indefinite series of loans and repayments.

"The object of the device is this: old members, who had borne the expense of the original loan, would naturally not admit new members to joint ownership in a property to which the latter had contributed nothing, while new members would not always be prepared to pay down at once into the reserve fund a sum equal to the individual outlay of original members. However, a new member is at any time admitted, if he is prepared to pay down, besides his premium per cow, a subscription corresponding to the amount which, at the time he happens to join, is paid off on the debt of the creamery. The loans are obtained at an average rate of 4 per cent from the municipal savings banks or from private provincial banks.

"In France the majority of the dairies are also formed without capital shares. As in Denmark, the funds are raised by loans bearing about 4 per cent partly from the richer members of the society and partly from private banks. The plan of making new members pay entrance fees proportionate to the amount of the loan already discharged has apparently been found quite workable in practice."

As a rule, a shareholder should have but one vote and not a vote for every share, or, if there is a wide difference in the amount of butter-fat furnished by the members, the voting power may be made proportional to the amount of butter-fat delivered. The dividends should be payable on the amount of butter-fat delivered, whether the creamery is formed as a stock or non-stock corporation, though in the former case, a dividend equal to the usual rate of interest may be paid on the capital stock before the net earnings are distributed.

A group of farmers who contemplate a creamery organization should look carefully into these fundamental questions. There are numberless creamery promoters who endeavor to organize the farmers in order to sell them machinery or other supplies. As a rule, they cause the farmers to spend thousands of dollars more than is necessary in starting an enterprise of this character, besides injuring the creamery movement in the community whenever such an enterprise fails. Generally the farmers do not look into these fundamental questions until after they have made a serious mistake, and then they find that their association has been formed in a loose way or along extravagant lines. In many of the states, the Dairy Division of the State Agricultural College or the Dairy Commissioner will coöperate with the farmers, assisting them to organize along lines that have made the coöperative movement most successful.

The data following are taken from a model organization agreement that is used by the Dairy Division of the United States Department of Agriculture in assisting the dairy farmers to form a creamery or cheese factory as a coöperative enterprise: —

ORGANIZATION AGREEMENT

We, the undersigned citizens of ________________ County, State of ________________, do hereby agree to form ourselves into an Association, to be known by the name of ________________ Coöperative Creamery Association, and we agree to take, at the rate of $ ________ each, the number of shares set opposite our names, and further agree, at all times after the commencement and during any time of operation of the creamery erected by the Association, to furnish to said creamery all the milk or cream that we produce for market. In case there are not 400 cows belonging to those subscribing for shares or if less than $ ________ worth of shares is subscribed, this agreement shall not be binding.

NAME	ADDRESS	NO. OF SHARES	NO. OF MILCH COWS

ARTICLES OF AGREEMENT OF THE ____ ASSOCIATION

We whose names are hereto subscribed, and whose residences are within the county of ______________, in the State of __________, do hereby associate ourselves together as a coöperative association under the laws of the State of __________, and have adopted the following constitution, viz.: —

ARTICLE 1

The name of the association shall be the ____________ Association and its place of business shall be at or near Section __________, in the Town of ____________, in *said County.*

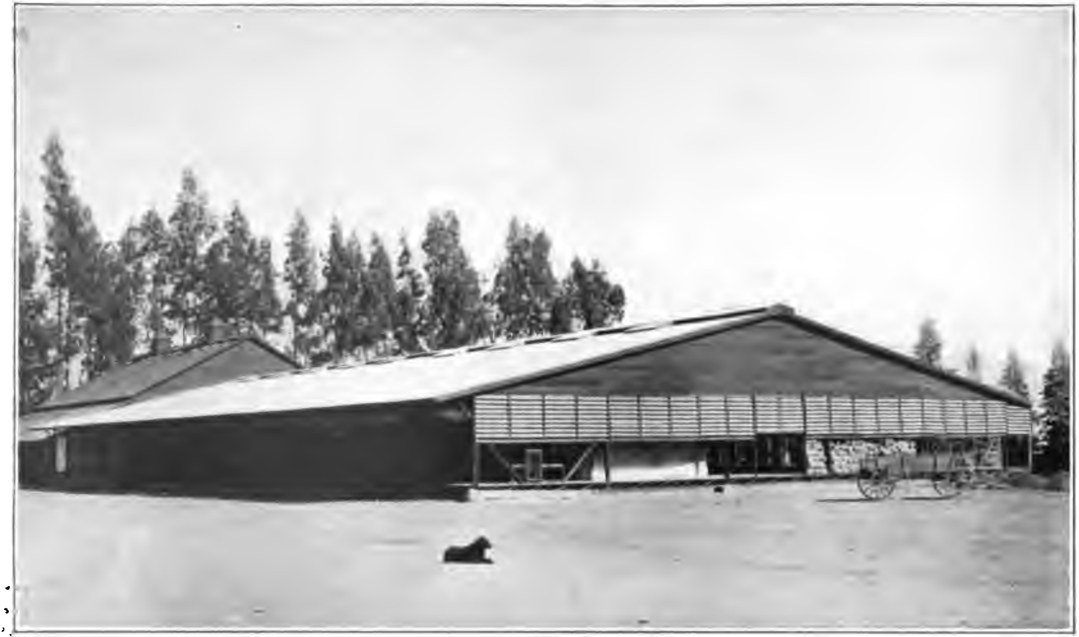


PLATE VIII.—Lemon Packing-house. Santa Paula. California. Chapters IV, VIII.

ARTICLE 2

The object of the association shall be the manufacture of butter or cheese or both from whole milk and cream, at actual cost.

ARTICLE 3

The officers of the association shall be a president, vice-president, secretary, treasurer, and three trustees, who shall be elected annually at the regular annual meeting of the association to be held on the first Monday in January of each year, and their terms of office shall be one year or until their successors shall have been duly elected and qualified.

ARTICLE 4

The duties of the respective officers shall be as follows:—

The president shall preside at all meetings of the association, and he shall have power to call special meetings of the association whenever in his judgment the business of the association shall require it.

The vice president shall perform the duties of the president when the latter is absent or otherwise unable to attend to them.

The secretary shall keep a record of all meetings of the association and shall send or cause to be sent a notice of the annual meeting to each shareholder of the association at least ten days before such meeting. He shall also make and sign all orders upon the treasurer. He shall compute the amount of milk and cream received, the amount of product sold and all moneys received therefor, and after deducting from the total receipts the percentage herein provided for as sinking fund, and also the running expenses, on the 20th day of each month, shall divide the remainder for the preceding month among the members and patrons of the association, proportionately to the number of pounds of butter-fat furnished by each.

The treasurer shall receive and receipt for all moneys belonging to the association and pay out the same only upon order which shall be signed by the secretary; he shall give bond in such amount as the association shall provide.

The president, vice president, secretary, and treasurer and three trustees shall constitute a board of directors whose duties shall be to audit and allow all just claims against the association.

The board of directors shall cause the secretary to make in writing a report of the annual meeting of the association, setting forth in detail the gross amount of milk and cream receipts, the money receipts and disbursements, together with a comprehensive statement of the financial standing of the organization and such other information as may be necessary for the shareholders and patrons to understand the business condition of the organization and he shall cause such a statement to be printed on the notice of the annual meeting.

ARTICLE 5

The several members shall furnish all the milk, or cream from the same, from all the cows subscribed by each member, all milk and cream to be fresh, unadulterated, and pure. Patrons of the association, not members, may by agreement with the board of trustees, furnish such amounts of milk and cream as may be agreed upon. The association shall receive all such milk and cream so furnished, manufacture the same into butter or cheese or both, sell the product, and from the moneys so received deduct such percentage thereof (or such a number of cents per one hundred pounds of milk, or a fraction of one cent per pound of butterfat) as shall be agreed upon by the association in the by-laws or otherwise, and also deduct the running expenses of the creamery, the remainder to be distributed as provided in Article 4.

ARTICLE 6

Each member shall be entitled to one vote at any meeting of the association. New members may be admitted as provided in the by-laws.

ARTICLE 7

The first officers and board of trustees shall be as follows:—
________________ President, ________________ Vice President,
________________ Secretary, ________________ Treasurer,
________________ Trustee, ________________ Trustee,
________________ Trustee.

ARTICLE 8

The constitution may be amended at any annual meeting, or at any special meeting called for that purpose provided that two-thirds of all members present vote in favor of such change; and provided further that at least one month's notice of such proposed amendment shall have been given in such manner as may be provided for in the by-laws or otherwise by the association.

ARTICLE 9

Shares may be transferred from one person to another only by the order of the board of directors to the secretary to have such shares transferred on the books of the association, and no person shall at one time hold more than four shares. Any member selling his milk or cream at any place other than the creamery of this association shall forfeit his stock and all interest in the creamery.

BY-LAWS OF THE ________________ ASSOCIATION

1

The treasurer shall give bond in the sum of ________ dollars, the bond to be approved by the board of directors.

2

One-half (½) cent per pound of butter-fat received at the creamery shall be reserved to form a sinking fund.

3

Milk or cream shall be delivered to the creamery as often as possible or according to agreement between the operator and patrons.

4

All milk and cream shall be sweet and in good condition; if any be found otherwise, the operator may condemn the same. The operator shall take for test a sample of milk or cream furnished by each member or patron each day.

5

Notice of any proposed amendment to the constitution shall be in writing or printing and shall be kept posted prominently in the creamery building and also on the walls of the delivery room for the reception of milk and cream, for at least ten days before such amendment is voted on.

The Status of the American Creamery

Taken as a whole, the coöperative creamery is one of the most loosely organized farmers' movements in America. The dairy farmers have not understood the fundamental principles underlying a coöperative movement. A large proportion of the creameries have, therefore, been conducted along lines that do not hold the continued confidence of the members. The dairy farmers as a class are not skilled in business methods. The dairy industry, except in a few states, is not a special, highly developed type of agriculture like fruit-growing and other branches of horticulture in the irrigated Western states. The dairy may be an incidental feature of the farm. The average dairy farmer is therefore not prepared to inaugurate and sustain a highly organized system of coöperative buttermaking, or the distribution and sale of the manufactured product. In many sections, the farmers' creameries have not been formed as a result of a necessity that was felt by the dairymen. A large proportion have been formed through the activity of professional creamery promoters who represent the manufacturers of creamery machinery or of other factory supplies. Skillful agents have been sent into every dairy section to convince the dairymen that an association creamery will improve their agricultural and financial condition. The agent looks after the incorporation of the association, he assists in the preliminary organization, in the sale of stock, and in the financing of the association. In the end, he sells the association the machinery and supplies, which may be inferior to other kinds of machinery, at a much higher price than is justified and usually under conditions that place the association under the financial control of the agent's principal. Hundreds of farmers' creameries have been formed in this way and as a result many have failed. It is a fundamental principle of coöperation in agriculture that under no circumstances should a farmers' coöperative association place itself under obligation, either financial or otherwise, to a firm from which it may purchase supplies or to agencies which it may use in the distribution and sale of its products. Whenever a farmers' organization is placed in this position, it loses its industrial independence and is prevented from developing along lines that insure its success as a business institution.

The most serious weakness in the coöperative creamery movement is the fact that each creamery usually acts as a unit in the manufacture of the butter, in the purchase of supplies, in the development of markets, and in the distribution and sale of its products. The average coöperative creamery is too small a business unit to handle these questions successfully in the face of the competition which each association has to meet. A small creamery cannot afford to employ the best expert butter-makers, nor can it develop a highly organized system of business management. As a result, the technical details of butter-making are likely to fall below the standards of a larger factory, the greatest economies in the purchase of supplies or in the manufacture of butter cannot be inaugurated, and no comprehensive system of distribution and sale can be developed. The average coöperative creamery therefore manufactures its product at a comparatively high unit cost. The quality of the butter, while comparatively good, is below the standard of the quality of the raw cream. The creamery consigns the butter to a commission firm or other agent, thereby turning over the sale of the product to the usual selling agencies, without being powerful enough to exert an influence on the system of marketing.

The Centralizer Creameries

The strongest competitors of the coöperative creamery are the centralizer creamery corporations. These corporations are formed to purchase the butter-fat from the dairymen, to distribute the butter to the trade, and to pay the profits from the manufacture and sale of the butter in the form of dividends to the stockholders. The centralizers establish a number of skimming stations where the butter-fat is separated from the milk. The dairyman is paid for the butter-fat when it is delivered to the station, or at the end of the month, and his connection with the butter-making business ends at that point. The cream is shipped from the skimming stations on fast trains, usually though not always under refrigeration, to the central butter factory, where it is given uniform treatment and manufactured into butter. The skimming stations may be located from five hundred to seven hundred and fifty miles from the central butter factory; a corporation in Topeka, Kansas, for example, assembling the butter-fat from southern Colorado, Oklahoma, northern Texas, and from Kansas. The centralizers sell the butter to the jobbers and retailers direct under a comprehensive marketing system. In some cities, they deliver the butter from the railroad to the retail dealers in their own wagons.

The centralizer creameries are highly developed business institutions. Some of them manufacture 100,000 pounds of butter daily and turn out from fifteen to twenty thousand tons annually. The managers are experienced business men and are sometimes paid five thousand dollars a year. They can employ well-trained butter-makers and can apply the best butter-making science to the equipment of their factories. The factory equipment and the supplies are purchased on a large scale, and the volume of business is large enough to develop a well-organized marketing system. Compared with the average coöperative creamery, the centralizer creameries are far in advance in the science and art of butter-making and in the organization as a business enterprise. From the standpoint of the product itself they are at a distinct disadvantage, because the grade of cream that reaches the central factory from the skimming stations is below the quality of that delivered to the farmers' creamery. It reaches the central factory in all kinds of conditions, and the factory has to depend on the technical skill of the butter-maker to renovate and blend the different lots of butter-fat and to turn out a product of good average grade. The coöperative creamery has the highest quality of butter-fat to work with and may spoil it through unskillful manipulation. The centralizer employs the highest class of buttermakers and depends on them to overcome the disadvantage of a comparatively lower grade of raw material.

A Business System for Coöperative Creameries

If the coöperative creamery is to hold its own in the future, it will need to improve business methods in the organization of the creameries, in the equipment of the factories, in the economies in manufacture, in the purchase of supplies, and in the development of a system of distribution and sale of the butter. In no other way can it exist permanently as an important factor in the development of the American dairy industry. There are many local creameries in the dairy states that can always meet competition with the superior grade of butter that they manufacture, but, as a national movement, the farmers' creamery will need to readjust the methods of handling the business side of the dairy industry, or else the handling of the dairy products will pass into the control of the corporations that are formed primarily to make a profit on the dairymen's product rather than to develop a vigorous, healthy dairy industry.

The average coöperative creamery cannot reorganize along these lines. The volume of business transacted by each is too small to warrant extensive reorganization. These creameries are in a similar condition to the apple-growers' associations of the Northwestern states. There are many of these small associations, each of which acts as a unit in handling a beautiful natural product. The apple business is increasing by leaps and bounds, and when the volume of business reaches the point where the market cannot take a larger supply of high-priced fruit under the marketing conditions as they exist in the Northwest, the local association will fail to protect the capital which is invested in the apple-growing business. The coöperative creameries, like the Northwestern apple-growers' associations, need to create a number of central coöperative agencies, one, for example, for each state or other large geographical division, to act for them at cost in purchasing supplies and in the distribution and sale of their products. In no other way can the situation in either case be met effectively. These central agencies, like the California Fruit-growers' Exchange, will supply the facilities for marketing the product of the creameries or associations which comprise it; they will look after the general questions aside from marketing that affect the upbuilding of the industry; they will bring about uniformity in the equipment of factories and in the manufacturing processes. They may act as an agent, or may form subsidiary corporations, to purchase factory supplies and the general supplies used on the dairy farms, and they can develop a comprehensive system of marketing by advertising and by the employment of exclusive agents in the principal markets. In this way, the coöperative creamery can be organized more effectively than a large creamery corporation, and it can more than meet competition with the superior butter that will be made in its factories. Under this system the local creamery is an association that manufactures the butter and prepares it for shipment. The associations of a community or of a state federate and form an agency which either markets the butter for the local creameries under local brands or furnishes the marketing facilities which the local associations use in marketing their own product. In the primary dairy states, the creameries in a county or a community may form a local exchange to look after the problems that affect them all alike, and these local exchanges, like the district exchanges in the citrus industry in California, may form a larger central agency to represent them in the distribution and marketing of the butter.

In brief, then, the coöperative creamery movement starts with the dairyman as the unit; the dairymen of a community owning four hundred or more cows form an association, on coöperative principles, build a factory in which the cream of the members is assembled under rules and regulations established by the association, and is there made into butter and prepared for shipment. These local associations form a district agency on coöperative principles which looks after the local questions that affect them all alike and which may act as a marketing agency for them; or, if the plan is more comprehensive, the district agencies may form a central exchange which acts as a brokerage agent for the district organizations, operating at actual cost in furnishing the marketing facilities, in the development of markets, in the handling of the general public policy questions that affect all of the associations and district agencies, and in providing a system which operates towards the general upbuilding of the dairy industry. It can employ traveling experts to assist the local butter-makers and the association managers, and help in the formation of new associations. It is this system that has given Denmark the primacy among the dairy countries of the world. In Denmark, there are at least nine selling federations that represent the dairy associations in the sale of their products.

It is essential to the American dairy interests that the coöperative creamery system be maintained and improved. In no other way can the dairy farmer insure the protection of his interests. The coöperative creamery is formed to handle the product of the members so that the producer shall receive the maximum return for his product after the operating costs have been deducted, and to improve the dairy industry in every other way. The centralizer corporation, on the other hand, is formed to make money out of the product of the dairymen. It is also interested in the development of the industry as a means of making larger profits for the stockholders. The two systems aim in the same direction, but for entirely different reasons. The former is interested in making the dairy industry better in order to make farming a more profitable and desirable vocation; the latter is interested in the development of country life only in so far as it is a means of paying larger dividends on the capital stock invested in the creamery corporation. As long as there is competition, the financial status of the farmer may improve under either system. But the aim of the large corporations that handle the common articles of consumption is to become monopolistic by suppressing competition, and when competition is stifled, to dictate to the producer the conditions under which he shall sell his products, the price which he shall receive, and the price which the consumer shall pay.

The speculators in California attempted to eliminate competition in the early stages of the citrus industry; the line-elevator companies, assisted by the railroads, accomplished this end in the grain business; the apple and peach buyers by mutual agreement have frequently done the same thing in these industries. Unless the coöperative creamery associations federate into a more efficient business organization, the dairy industry will gradually pass into the hands of the corporations that are formed to make the largest possible profit out of the products of the dairyman.

A Coöperative Dairy Federation in Minnesota

An effort is being made in Minnesota through the Minnesota Coöperative Dairies Association to distribute and sell the product of creameries on the coöperative plan. A corporation was formed in 1907 by seven local coöperative creamery associations. The association was organized with a capital stock of $12,500, divided into five hundred shares. The stock cannot be sold by a member without first giving the association the first option to purchase, and a stockholder has but one vote at any stockholders' meeting. The purpose of the association is to receive, sell, and otherwise dispose of all products of any individual manufacturing or agricultural coöperative association. It charges five per cent on the gross sales and from the revenues derived in this manner each month pays the cost of operation, charging to each member his *pro rata* share of the cost. The association retains one mill per pound on each pound of butter sold to be held as a reserve or for other purposes, and prorates the balance from the five per cent to each shipper, when such a balance exists.

The association has appointed agents who were formerly in the dairy business in New York, Philadelphia, and Chicago, these agents receiving a certain proportion of the selling charges deducted by the central association. The business of this association is being gradually enlarged.

The Creamery as a Center for Rural Improvement

The creamery is the natural center around which several coöperative movements may be organized. The cow-testing and the cattle-breeders' organizations may be associated here. It may be the center for a number of other coöperative activities such as a bacon association, an egg-distribution association, and an organization for the purchase of farm supplies. The agents that are used to market the butter may be used to market the eggs, and a cold-storage plant in conjunction with the creamery may be utilized as the centralizing station for the eggs of the community while preparing them for shipment.

COÖPERATION IN THE DISTRIBUTION AND SALE OF MILK

The coöperative method has been applied by the dairymen to the handling and distribution of milk in some parts of the United States, but not to the extent that it has been used by the producers of butter and cheese. In most of the large cities the milk supply is controlled by a few corporations, by associations of dealers, and by small independent dealers. In New York State, for example, the largest dealer in milk is the Borden's Condensed Milk Company, which is closely identified with the Standard

Oil Company. They have strict and often arbitrary rules to which all farmers who sell to them must conform. For example, the Bordens at one time would not buy milk from Holstein herds, nor could farmers feed ensilage to the cows. These large corporations generally erect assembling stations in the country, where the dairymen deliver the milk in cans and where they are paid for it at a rate per hundred pounds. The milk is there mixed, cooled, and bottled. It may also be clarified and pasteurized. It is then packed in ice and shipped in milk cars under refrigeration, if the railroad will provide it, to the city, where it is received and distributed to the consumers in the wagons of the corporation. A big fight over the furnishing of refrigeration was waged by the milk shippers in 1911 with the Philadelphia and Reading Railway. The assembling stations are also equipped with cream separators and with butter-making machinery to be used when there is a surplus of milk. These large corporations may own a number of dairy farms, where a portion of their milk supply is produced. These farms are often run as demonstration farms. The most approved stock barns are erected, silos are built, the herd is wisely managed, and a crop rotation system is adopted that is designed to influence the agricultural practices of the community along progressive dairy farm lines. The small dealers usually have no bottling stations in the country, but receive the milk in the city in cans. They take it to their business places, where it may be bottled or peddled from the cans to the consumer, though this latter practice is prohibited under the laws and regulations of many of the cities.

When there is actual competition among the purchasing agencies, the dairyman may receive a fair price for the milk. In practice, however, the producer is almost wholly at the mercy of the milk dealers, who become sufficiently powerful to dictate the price which shall be paid to the producer as well as the price which the consumer shall pay. In some of the cities, the milk dealers have formed combinations which have been shown to operate as a restraint of trade and as a monopoly in the milk traffic of the community. Neither the individual producer nor the individual consumer can protect himself against a combination of this character. In New York City, for example, the dealers who control the milk supply have been able to force the price of milk which the producers were paid down to or even below the cost of production. They have also from time to time through mutual agreement simultaneously raised the price of milk to the consumer and have coerced the independent dealers by selling milk to their customers at a lower price than the independent dealers received for the milk. Through the evolution of the milk-distributing business, the city milk dealers have acquired a position of virtual monopoly. This condition has in the past been so intolerable that many producers have abandoned the production of milk, and the state has found it necessary to bring action under the anti-monopoly laws against the middlemen to protect both the producer and the consumer alike against their unreasonable abuses. In the face of this condition, whereby competition has been eliminated among the milk dealers, there are two ways in which the interests of the public may be protected. The first is the regulation of the practices of these middlemen by the state, whereby the commonwealth protects the public against monopolistic mischief and says that the common necessities of life shall be furnished without discrimination and at a reasonable compensation. The second is through the state and municipal ownership of the facilities of distributing the necessities of life, a method that is being tried experimentally and which, on account of the greed of the middlemen when unrestrained and the partial failure of state regulation up to the present time, is growing in popular favor in the United States.

The Organization of Milk Producers

The producers of milk, however, do not need to invoke the law as the only means of protecting themselves against the abuses of the middlemen. They have it in their own hands to meet these conditions and to protect their own interests to a large extent by conducting their business through coöperative organizations. Neither should the consumers depend wholly on the state to protect them against the greed of the middlemen. They, also, have it in their hands to organize coöperatively and thereby safeguard their interests in their dealings either with the middlemen or with the organizations of producers. The state and the municipalities may enact legislation that will tend to prevent monopoly and the restraint of trade and to protect the public against the abuses of organization, but neither the producers nor the consumers of the United States should depend on the law to protect them against abuses which they can at least partially correct by conducting their business operations along legitimate organization lines. Unless the producers and consumers apply such remedies as lie in their hands, the abuses of unregulated capital will lead to the state and municipal ownership of public and semi-public utilities and in the end to universal socialism. The plan of organization is simple. The milk-producers of the country should form a large number of local coöperative associations as the citrus fruit-growers of California have done. These associations may be formed independently, or they may be organized around local associations which are already in existence, such as the grange. These associations should build stations where the milk of the members will be assembled and prepared for shipment in accordance with the most advanced sanitary principles of milk handling. These local associations should not attempt to distribute or sell the milk except in small places where the volume of business is not too large for an association to act as a distributing agent. The associations of a county or a community should then federate and form a coöperative corporation to act as an agent for them in handling their common business problems, and these district federations may then form a larger federation, incorporated on coöperative lines which will furnish the facilities to be used by the division federations in the distribution and marketing of the milk. The ultimate responsibility for determining the price for which the milk shall be sold to the consumer should rest with the producers through their local association, and the freest competition should be preserved among them. The central organization or exchange is the medium through which information concerning the markets passes to the district federations and through them to the local associations. It furnishes the agents and wagons for distributing the milk to the consumers in the towns and cities, collects the money for the milk and sends it to the district federations, maintains correct relations to the municipal health laws, protects the associations against litigation, looks after traffic matters and public policy questions. It may also act as a purchasing agent in securing the supplies used by the local associations and may employ traveling experts who will assist the local associations and the district federations in the development of their respective businesses along the most desirable agricultural and organization lines. All of the operations of the local associations, the district federations, and the central exchange should be exclusively under the control of the producers of the milk, and each of these agencies should be conducted at actual cost, the entire profit going to the producers. If the producers do not care to undertake to distribute the milk to the consumers, a similar organization is just as desirable in protecting the producers in their dealings with the established agencies of distribution. Without such a united effort, the individual farmer is wholly at the mercy of those who are organized to make an unreasonable profit by distributing the products of the farm to the consumer in the towns and cities.

In several cities, especially in the East, the consumers have been supplied with milk furnished by coöperative associations of producers. There is such an organization in northwestern Pennsylvania, known as the Erie County Milk Association. It is formed by dairymen in Erie County to distribute milk and cream in the city of Erie at the lowest possible cost to the producers. The milk is collected from the farmers by association wagon and is delivered to a central station in Erie where it is treated to remove all foreign matter, then remixed, standardized to about four per cent of butter-fat, bottled, pasteurized, and distributed to the consumers in wagons belonging to the association. The association also manufactures ice cream and has a small creamery in which to utilize the surplus milk. Formerly, the milk was distributed in Erie by the individual dairymen at an unnecessary expense to each one, and, therefore, either at a lower net profit to the producer or a higher cost to the consumer. This association is formed as a stock company. The shares of stock are sold at fifty dollars each. The milk is paid for at the rate of three and a quarter to three and three-quarters cents per quart with a minimum standard of three and one-half per cent of fat. It pays fifty-five cents a gallon for twenty per cent cream and one dollar and ten cents per gallon for forty per cent cream. The surplus profits are prorated to the producers on the amount of stock held, but the amount of stock issued to each member is proportional to the amount of milk delivered.

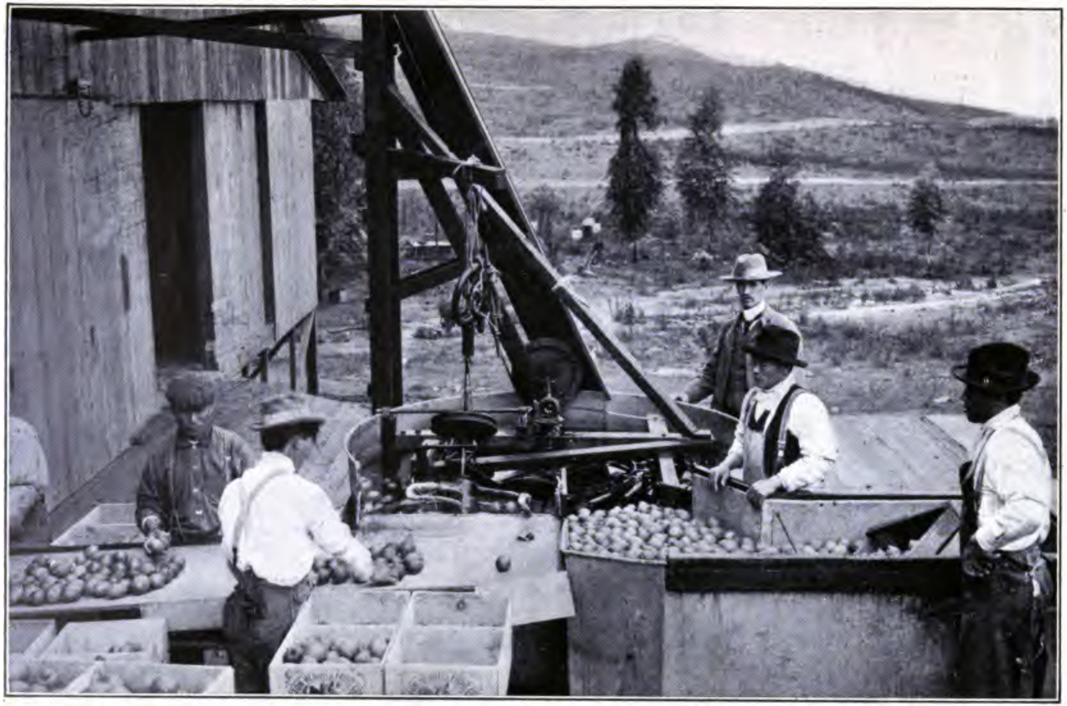
The New York Dairymen's League

The New York Dairymen's League is a corporation formed by the producers of milk who supply the city of New York, where fifty thousand cans of milk are consumed daily, to act for them in marketing their milk. The stockholders of the League pay twenty-five cents per cow for the stock, which is issued at the rate of two dollars and fifty cents per share. The company reserves the right to purchase the stock of any stockholder who desires to sell.

The League, which is just organizing, is planned to act as an agency through which the milk producers can act in the protection and upbuilding of the industry. It is not a milk-distributing agency, but rather an organization which protects the producers in the dealings with the established distributing agencies. The purpose of the League is to "oppose and prevent monopoly in the production or sale of milk, to encourage competition therein, and to protect its stockholders and the consumers of milk against monopoly or any unlawful combination of any kind or nature whereby the producers or consumers of milk are injuriously affected, to promote legislation and board of health ordinances beneficially affecting the interests of the stockholders who are producers of milk for the metropolitan district and other markets, and to act as their agent in marketing their products and to carry on all such business as its articles of incorporation authorize."

The producers of a community where there is a creamery, a condensery, or a shipping station form a local association which acts for the producers in dealing with the League, or the League may act through a local grange, the New York State Grange having three members on the Board of Directors of the League. The League already has several thousand members representing thousands of cows. The local organizations have been formed in New York State, Massachusetts, Connecticut, New Jersey, and Pennsylvania.

PLATE IX.—Lemon Washing-machines. Chapters IV, VIII.



THE EGG BUSINESS

It has been estimated by Secretary Wilson that the value of the poultry and eggs produced on the farm reached in 1909 the enormous annual value of $600,000,000, or the equivalent of the value of the hay or the wheat crop, and the production is rapidly increasing. It has been shown by Miss Pennington and Mr. Pierce[1] that there is a total loss of 7.8 per cent of the eggs marketed as a result of improper handling from the farm to the market. It is pointed out by these investigators that the egg must be kept cool at every stage of its handling if it is to reach the consumer in a perfectly fresh condition. In describing the conditions under which the egg supply is handled from the farm to the packing-house the authors say: —

"The first responsibility for the low quality of market eggs rests upon the farmer, and after him come the country produce dealer or store-keeper and the shipper who does not have artificial refrigeration. Usually the farmer gathers his eggs daily, or he may gather them at irregular intervals. Stolen nests often accumulate a large lay, over a period of some weeks, and may have been covered by brooding hens for a while, to boot, before the farmer happens to find them; but the chances are that every sound-shelled egg goes to market, regardless of the condition inside the shell. If the eggs are gathered with fair regularity, how are they kept while on the farm? Generally where the housewife can most conveniently get them for household use, not where the temperature is low and the air fresh. Neither does the farmer have any regular time for taking this stock of eggs to market. In the spring, when they are most plentiful and the market is falling, he is apt to go weekly, or the egg peddler calls at the farm. When hot weather comes and the lay falls off, he waits for a larger number or is too busy with 'crops' to drive to town. Meanwhile shrinkage and incubation are going on rapidly, and, as a last insult to the hen which laid a perfectly fresh egg and the consumer who wants a perfectly fresh egg, he often goes to market with an umbrella over himself, but the basket or box of eggs is exposed to the summer sun, a heat which is often 110 degrees F. and may be 10 degrees or more above that. In the autumn, with a still smaller lay and a rising market, he holds eggs for high winter prices. The conditions under which he keeps them are not conducive to good preservation, and the time is inordinately long.

---

[1] Yearbook, U. S. Department of Agriculture, 1911.

"*From the country merchant to the packing-house.* — The country merchant handles eggs as a by-product, taking them in exchange for merchandise. He makes his profits on the merchandise taken in trade, not the eggs, frequently giving an inflated price for them to hold the trade of the desired customer. He, too, is more apt to be careless than careful of them while they are in his possession, storing them in hot or damp quarters and holding for high prices when production is low.

"The country merchant and peddler buy eggs 'case count,' rather than 'loss off.' Buying 'case count' means that a uniform price is paid per dozen, irrespective of the quality of the eggs. Rots bring just as much as good eggs. Buying 'loss off' means that the eggs are candled before payment is made, and rotten and broken eggs are returned to the farmer. Occasionally a difference is made between first and second quality eggs.

"The farmer usually delivers the eggs to the storekeeper or packer's agent by wagon. From these receivers they commonly go to a central shipping plant, which is generally known as a 'packing-house,' and which handles goods in car lots. This plant may or may not be provided with the proper facilities for doing the work assigned it. To get to the packer, however, the eggs generally go by train and in comparatively small quantities, therefore, as 'less than car lots,' or what is known to railroad men as 'l.c.l.'s.' For such small lots and for short hauls the goods are picked up by a local freight train. The wait at the station, which is frequently only an open platform on which the cases remain until the arrival of the train, is ruinous to quality when the weather is warm.

"The haul in the 'pick up' freight car, the temperature of which is governed entirely by atmospheric conditions, results in rapid deterioration in summer and oftentimes freezing in winter. Generally the time required for the haul from the agent or store-keeper to the central shipping plant or wholesaler is 24 hours or less. However, it may be longer when the territory drawn upon is large, as in southwestern Kansas or Oklahoma, or when connections with small branch lines are not frequent. Under such circumstances the car becomes an excellent incubator, holding well the sun's heat during the cooler hours of night, and it is not unusual in the summer months for the packer to be greeted by the cheerful 'cheep-cheep!' of newly hatched chicks as the cases are carried into his receiving room. This does not mean that atmospheric temperatures are the sole source of incubation. Stolen nests frequently furnish eggs with chicks so well developed that only a short time is needed to hatch them. It does mean, however, great loss from rots and spots and a general loss in freshness."

The packer, upon receipt of the eggs, unpacks them in a chilled room, candles them to remove rotten and broken eggs, and grades them according to size, cleanliness, and to some extent freshness. The eggs are then packed in 30-dozen egg boxes and are shipped to the market center to a commission man, after which they have to pass through the hands of the wholesaler, perhaps the storage warehouse, and the retailer.

Some of the Remedies for the Egg Situation

In discussing the remedies for the existing condition in the egg industry, the authors lay down the following sound, fundamental principles: —

"First, the farmer must learn to select good breeds of chickens and take more care of them, that eggs may be larger, cleaner, and more plentiful on the farm. He should also kill off all the mature cocks as soon as the breeding season is over. It is commonly supposed that hens will not lay unless males are present in the flock, but such is not the case. Experiments have shown that flocks without males have produced as many, if not more, eggs than when males were present. When, however, males are present, the eggs are fertile, and therefore ready to develop into chicks when temperatures are favorable. Infertile eggs grow stale and shrunken, of course, if held too long, or kept under bad conditions, but they do not form 'heated eggs,' 'blood rings,' or the great number of 'rots' that come from developing embryos and which account for such a large share of the total losses. The education which the farmer should have in the gathering and care of eggs after they are laid, and the prompt delivery of them to the next person in the marketing chain, is self-evident from the recital of the farmer's present methods.

"*Changes in the methods of the small egg-buyer.*— The country storekeepers and small produce buyers are, next to the farmer, responsible for the number of low-grade eggs marketed. They must be taught to buy 'loss off' instead of 'case count.' Buying 'case count' places the good farmer and the poor farmer on the same basis, and is grossly unfair to the good farmer. The producer of good eggs receives less and the producer of bad eggs more than they are worth. What incentive is there, on this basis, for the farmer to take extra care and trouble?

"The country merchant should be eliminated entirely from egg handling. He likes to buy eggs from the farmer because their value is usually accepted in groceries and merchandise rather than money, and, as has been previously said, he makes a profit on his wares if not from the selling of the eggs. Then, too, if the farmer's wife brings in eggs greater in value than the goods she receives in trade, her credit on the merchant's ledger insures her continued trading with him. This makes eggs practically a form of currency. Oftentimes from her eggs and poultry a farmer's wife provides her family with clothes and groceries, and it is not at all unusual in small towns for the doctor and dentist to be paid with a due bill on the merchant to whom her eggs have gone, rather than with money.

"Frequently the merchant pays the farmer 2 or 3 cents a dozen more than he receives for the eggs when sold by him, thus inflating the price. The merchant recovers his loss on his merchandise and holds the trade of the farmer, but the man who makes a business of buying eggs suffers, and so does the townsman who has no eggs to trade, but must pay the same money price for goods that the farmer pays in eggs.

"Again, the merchant will buy 'case count' rather than 'loss off,' fearing to offend his patron. Hence, the produce dealer must do the same, because of the scarcity of eggs, close competition, and the farmer's lack of business knowledge. He cannot see that he actually loses money at the merchant's.

"To prevent the loss in eggs due to the country merchant, a cash business on the quality basis should be instituted. Then the small egg merchant could buy 'loss off,' pay for the eggs in money, and the farmer could purchase his supplies where they are best and most reasonable. If competition were placed where it belongs, among the regular egg-buyers, the eggs would go to market more rapidly and in better condition.

"Another bad habit which is gaining in the countryside is the leaving at the farm by the packer or merchant of carriers holding 30 dozen. The farmer waits until the case is full before marketing. This is not objectionable when the flock is large or production rapid, but out of season or on the small place it means three or four weeks' holding to get a full 30-dozen box.

"*Buying eggs by quality — not by count.* — The shipper can materially improve the quality of eggs in the market if he persistently buys by quality — not simply by count. He will also improve his business. This has been tried sporadically, by a shipper or two, here and there, but all except a few firms have forsaken their guns when shots were most needed — that is, when eggs became scarce or low grade, and competition began to be felt. One packer has adhered to a quality basis for 12 years, using four grades. He has built up a business which is good and a reputation which is even better. This reputation prevails not only on the market, where his egg pack is taken without a question, but among the farmers and peddlers who supply him with eggs. His grading is accepted by them, and their aim is now not only to see how many eggs they can bring in, but how many of them can be gotten to him as 'number ones.' Here is a real educator as well as a good business man.

"*Refrigerated receiving stations.* — The packer, too, must have artificially refrigerated rooms for handling and holding eggs. Indeed, it seems likely that, as the egg and poultry industry develops, and we must give more attention to the saving of the garnered foodstuffs, there will be numerous receiving stations throughout the country, easy of access and artificially refrigerated, that perishable products in general may be economically handled at the source of production.

"*Care of eggs at the source of production.* — The source of production: there is the starting point for most of the trouble in the handling of perishable produce, be it Southern cotton mishandled in the field before it is baled, or Western corn that is not well dried before it goes to the elevator, or eggs that are heated or soiled or cracked on the farm. Not all the trouble is at the starting place, of course. Good handling must be everywhere from the producer to the consumer if the maximum of quality and the minimum of loss is to be maintained. But even perfection of handling at the market center cannot compensate for bad treatment at the source of supply. The wholesaler is being driven to good equipment and good methods because it is economy; the retailer is being forced, little by little, to tell the truth because the strong arm of education and the long arm of the law are both after him; but the farmer, the country merchant, and the small packer are sadly in need of precept and example for the sake of both the producer and the consumer."

MARKETING EGGS THROUGH THE CREAMERY

A practical way to improve the conditions in the egg industry is to form a coöperative egg-distributing association as an adjunct to the coöperative creamery. Several associations of this type are already in existence in the United States. There are numbers of similar societies in Denmark and in other foreign countries. The method of marketing eggs through an association connected with a creamery is described by Slocum [1] as follows: —

"The marketing of eggs in this particular instance is accomplished through a creamery in the northern part of Minnesota. Because of the fact that farmers must take their milk or cream to the creamery at frequent and regular intervals, it is an agency especially well suited to obtaining the egg in a fresh condition from the farmer. As it seems that there must be other creameries so situated that they could readily put their eggs directly in the hands of a retailer in a fair-sized city with only a short shipment, it seems well to describe in detail the methods used in this case. The volume of eggs handled in this way would, of course, probably never become so great as to make them a factor in the mass of eggs now handled commercially.

---

[1] Farmers' Bulletin 445, U. S. Department of Agriculture.

"As stated before, the eggs are brought by the farmer directly to the creamery when bringing his milk. While this particular creamery is privately owned, it is essentially coöperative, in that its owner and manager is a far-sighted business man with other interests in the village, and he sees that the increased agricultural prosperity of the community will eventually be to his advantage. In consequence he is content to take a small profit for himself and to pay the farmers as liberally as possible for both their cream and eggs. Any patron of the creamery or any other person who will sign a required agreement may market his eggs in this way. At present about one hundred and thirty-five farmers are taking advantage of this method of disposing of their eggs. These egg patrons are scattered over quite a wide territory, one man finding it to his advantage to drive in 14 miles with his eggs.

"The agreement reads as follows: —

"'For the privilege of selling eggs to the creamery company and getting a market established for guaranteed fresh eggs, I, the undersigned, hereby pledge myself to comply in every way with the following rules:—

"'I agree to deliver eggs at the creamery that will not be to exceed 8 days old and to be picked in (gathered) twice every day.

"'Eggs to be of uniform size (no under-size or over-size eggs).

"'Eggs to be clean and to be kept in a cool, dry cellar.

"'Brown eggs to be put in one carton and white in another and so marked.

"'Each egg to be stamped on the side and carton to be stamped on the top.

"'I agree not to sell any eggs that I have marked with the creamery company's trade-mark to any one else but the creamery company, and to return stamps and other supplies that have been furnished, in case I should decide to discontinue to sell eggs to the creamery company.'

"It is readily discernible from the provisions of this agreement that the aim is to get a grade of uniform, clean, dependable eggs, of reasonable freshness. It might seem that requiring delivery once in eight days would not be frequent enough, but the nights in Minnesota even in summer are said to be usually cool, and this condition, together with the gathering twice a day and the storage in dry, cool cellars, must account for the fact that no complaints have been received on the score of staleness.

"The separation of the brown and the white eggs serves two purposes. First, it promotes uniformity and greater attractiveness of appearance, and second, it encourages the keeping of the breeds of hens which lay white eggs, because the owner of the creamery pays during the spring months 1 cent more for white eggs than for brown. The creamery owner justifies this action by the statement that it was his belief that his markets would pay a premium for white eggs in the near future, and that he wished to stimulate the keeping of one class of chickens, so as to insure a more uniform product.

"To every person signing the agreement quoted above a small rubber stamp is given for use in stamping the eggs and the container. This stamp plays an important part in the system of marketing. It contains the name of the creamery, the creamery brand, and a serial number for each producer. By means of the stamp which thus appears on each egg and on each package it is possible to trace the product back to the individual producer, and in consequence to place the blame for any carelessness or poor quality where it belongs. A repetition of any offense of this nature may be sufficient ground for refusing to handle the eggs of that particular producer.

"When the creamery patron signs the agreement, and at such times thereafter as may be necessary, he is furnished with a supply of cartons or containers in addition to the rubber stamp. These cartons are the ordinary one-dozen size pasteboard egg boxes which are so shaped that they may be packed in a regular 30-dozen egg case. The following guaranty is printed on the top of the carton: —

This package contains
ONE DOZEN GUARANTEED FRESH EGGS
——— Creamery Company
Manufacturers and Dealers
Eggs, Butter, Pasteurized Cream, and Ice Cream
——— Minnesota.

NOTE. — Eggs in this package, if they have our trade-mark on them, are guaranteed to be strictly fresh, clean, and full size, and if ever found otherwise, we wish you would do us the favor to report it, giving number found on the egg.

——— Creamery Company.

"The farmer takes these cartons home, and as the eggs are gathered each day, the clean, good-sized eggs are stamped and placed in them. When a carton is filled, it is stamped on its upper side just the same as the eggs.

"When the farmer comes into the creamery with his milk or cream, he brings along as many cartons or dozens of eggs as he has. The man in charge of the creamery takes these eggs, examines the packages, and gives the farmer a check for the eggs delivered that day. The cartons are then packed in substantial returnable 30-dozen egg cases and shipped to market by express. The shipping charges are paid by the consignee. The labor and cost of handling the eggs at the creamery are thus reduced to a minimum. The eggs are never candled, reliance being placed on the farmer to bring in good eggs. The cost of handling the eggs, including the cost of the carton, which is about one-half cent, is estimated to be 1 cent a dozen. The farmer in turn feels bound to be particular, knowing that any carelessness can be traced back to him and realizing that he thus jeopardizes his chances of continuing to dispose of his eggs in this manner. This he cannot well afford to do, as will be shown later by a comparison of the prices received for eggs marketed through the creamery and through the general store.

"In this particular case the creamery happens to be located within easy shipping distance of Duluth, Minn., and this city was chosen as a market for the eggs. One of the best grocery stores was already handling butter made by the creamery and was in consequence glad to take the eggs. The eggs, therefore, pass through only one dealer between the creamery and the consumer.

These eggs, because fresh, were soon in great demand by the customers of this store, and though sold for several cents a dozen more than other eggs handled, were always taken in preference. It is interesting to note that during the year and a half that this store has been handling the eggs, only two complaints have been made as to their quality. It is also significant of the recognition of their quality that the demand for them has greatly increased and that persons living on the opposite side of the city make special trips to this store by street car solely for the purpose of buying some of these eggs. The brand which is placed on the eggs and on the cartons has become strongly associated with quality in the minds of the consumers. This is illustrated by the statement that two cases of these eggs which came in unbranded for some reason or other were disposed of as eggs from this particular creamery only after a good deal of difficulty and on the personal guaranty of the proprietor. The consumers noticed the absence of the brands and demanded eggs so stamped."

Advantages of this System of Handling Eggs

"Previous to the inauguration of this method of handling the eggs by the creamery the farmers brought their eggs to the general store and traded them for merchandise in the usual manner. When the creamery first began to handle eggs, this innovation was looked upon with disfavor by the merchants, who feared that they would lose some trade because of the fact that the farmers received cash for their product. Gradually, however, these merchants have come to realize that as this method brought a greater return to the community for its eggs, it helped to increase the general prosperity and that under these circumstances their trade improved rather than degenerated. In consequence they have come to favor the step heartily, to feel a pride in it, and finally to feel grateful for being relieved of the necessity of handling the eggs.

"The advantage of this system of marketing, to the farmers or producers, has come about in two ways: First, it has increased the price paid to them by compelling an improvement in quality, by selling more directly to the consumer, and by establishing a reputation for the eggs sold under the creamery brand. Second, it has brought about a realization that poultry raising by the general farmer is profitable, that the income from this source is considerable, and that it is capable of increase by keeping better fowls and giving them better care.

"The increase in price which the farmer is realizing for his eggs as a consequence of the introduction of the new method varies with the season. During the spring, when eggs are plentiful and quite uniformly good in quality, the difference is small and does not amount to over 1 or 2 cents. From this time on the difference increases until the following winter, when it reaches as high as 10 cents or more. During the month of December, 1909, when this creamery was visited, farmers were receiving 40 cents a dozen for their eggs and continued to do so during the entire month. At this very time, as determined by personal investigation, farmers in a village of a near-by portion of the state were receiving 25 cents a dozen. There was, moreover, absolutely no expense of marketing to come out of this 40 cents, as even the cartons in which the eggs were packed were furnished by the creamery. From the following table giving the average price paid by the creamery by months during 1909, it can be seen that the return to the farmer is very satisfactory, and far better than that received where eggs are marketed, through the country store, where a bad egg is worth, or rather brings, as much as a good egg: —

AVERAGE PRICE PAID BY CREAMERY FOR EGGS IN 1909

MONTH	NUMBER MARKETED	AVERAGE PRICE PAID FARMER
	Dozens	Cents
January	630	35.6
February	1329	25.9
March	1771	19.0
April	2069	18.2
May	2445	19.8
June	1725	20.0
July	1509	22.7
August	1898	24.5
September	1562	25.1
October	507	27.0
November	229	37.4
December	810	40.0

"In this particular Minnesota village during the year 1909, which was just previous to marketing the eggs by the new method, the eggs received by the storekeepers hardly more than supplied the local demand. In fact, during the whole of that year only 15 cases, or 450 dozen eggs, were shipped out of the village. During the year 1909 nearly $4000 was paid out by the creamery for eggs, all of which were shipped away. The impetus which has been given the poultry business during the short time this method of marketing has been practiced may be judged from the statement of the proprietor of the creamery that from present indications he expected the egg business to double or treble during the year 1910.

"Along with this increase in the volume of egg receipts, which indicates a realization of the profitableness of the business and an increase in the number of fowls kept, has come an awakening to the value of better stock and improved methods. It is noticeable that pure-bred poultry is being introduced and is replacing the old flocks of mongrel fowls. Poultry papers are being subscribed for, and publications on poultry raising are in demand. New and better hen houses are being built, and systematic attention is being given to the care and feeding of the fowls. The great part of this awakening to the possibilities of poultry keeping is directly traceable to the method of marketing the eggs through the creamery which is used in this locality."

Conclusion on Handling of Eggs through Creamery

"It cannot be denied that in the particular case described above, marketing eggs through the creamery has been a success. It has brought about carefulness on the part of the producer and a most decided improvement in the quality of the eggs. It has, moreover, provided the market with a grade of good, fresh eggs, which are always in demand and which at present are almost unobtainable at certain seasons in the cities. It has, in doing this, prevented a considerable waste and loss in quality which is normally associated with the marketing of eggs in the Middle West, and has increased very materially the price which the producer receives. It would appear, in view of the fact that the creamery seems a logical and natural agency for the handling of eggs to good advantage, that this method, with modifications, is adaptable to a wide range of conditions, and that many creameries could well afford to make eggs as well as butter one of the products which they handle. Wherever this method is adopted it should mean a most acceptable increase in the price received by the farmer for his eggs, and this without any increase in cost to the consumer."

In December, 1911, according to Mr. Slocum, there were fourteen creameries that were handling eggs direct from the farmer along the general lines already described. Seven more creameries and egg dealers expected to take up the handling of eggs in a similar manner at that time, and a general interest was awakened in the movement by the publication of the bulletin by the Department of Agriculture.

COÖPERATION IN THE HANDLING OF EGGS IN OTHER COUNTRIES

In Denmark there is a very elaborate and extensive system of coöperation in use in the marketing of eggs. The Danish Farmers and Coöperative Egg Export Association was organized in 1895, and in 1909 it included five hundred egg-collecting circles, aggregating 43,000 members. This association markets poultry as well as eggs. Its central office is in Copenhagen. In addition, there are ten other packing plants. The members pay an entry fee of thirteen and one-half cents. The sales during 1907 were some ten million pounds of eggs and poultry, valued at about $1,080,000. The object of the association is said to be to establish the best possible market in foreign countries for Danish eggs by guaranteeing that the eggs delivered with the registered trade-mark stenciled on each egg are absolutely fresh and clean and by protecting the general interest of the Danish poultry keepers by preserving eggs and fattening and selling the poultry of the members, permitting a rational poultry management. The printed statutes for the egg circles read as follows: —

"No. 1. The 'circle' belongs to the 'Danish Coöperative Egg Export Association' and has to submit to its statutes in force at any time.

"No. 2. Members are accepted on application to the officers of the 'circle.' They pay 13.5 cents each and as a fee to the main association.

"No. 3. Every member is, without any special declaration, under the laws of the 'circle' as they now are, or as they may legally be amended.

"No. 4. Members have to deliver all eggs produced by their hens — home consumption, setting eggs, and accidentally found ones excepted — in the manner and on the days decided on by the officers of the 'circle.' This obligation holds good for one calendar year at a time.

"No. 5. No eggs older than seven days may be delivered; transgression of this rule, as well as the delivery of stale eggs, is punishable by a fine of $1.35 imposed by the directors of the coöperative association (main association) and may be increased to $2.70. One-half of the fine goes to the main association and the other half to the 'circle' in question. The decision of the main directors — irrespectively of that of the 'circle' directors or of the egg collector — cannot be appealed. In case of a suit for the collection of the fine, the party sued will have to pay the cost irrespectively of the law of August 6, 1824.

"No. 6. The eggs must be carefully collected every day and, in the hot season, twice a day at least. Accidentally discovered eggs (stolen nests) must not be delivered. Artificial eggs only may be used as nest eggs, and the hens must be kept from the nests during the night.

"No. 7. Only clean eggs may be delivered, and they must be kept protected against the sun, rain, and frost by the members as well as by the collector.

"No. 8. The members may only deliver eggs to the 'circle' from their own hens; transgression of this rule leads to a fine of 6.75 cents for the first time and 13.5 cents the second time per pound of any such unauthorized deliveries.

"No. 9. The membership list of the 'Circle' must show the number, the name, and position of each member and the number on the list must be the same as that with which he stamps his eggs. Changes in the list must be reported by the 'circle' chairman to the main office. Every member receives — on payment of 5.4 cents — a rubber stamp with ink and pad. The number of the 'circle' as well as that of the member, appears on this stamp, and each egg must be stamped plainly and neatly on the big end.

"No. 10. The egg collector can only accept eggs which are clean and plainly and neatly stamped.

"No. 11. The 'circle' directors may temporarily refuse to accept eggs from a member, and a member may be expelled by a majority vote at a general meeting or by the main directors.

"No. 12. The necessary capital for paying cash on delivery of the eggs of the members is provided by a loan, the members of the 'circle' becoming responsible for this loan which is paid to the egg collector who has to provide a satisfactory bond.

"No. 13. The eggs are paid for on receipt at the price set by the 'circle' directors. Whatever more the eggs may net is only paid to the members, after retaining a suitable amount for the working capital according to the views of the 'circle' directors.

"No. 14. Notice of withdrawal is given to the 'circle' directors, but only so as to take effect at the end of the business year. Withdrawn or expelled members have no claim on surplus reserve fund or other assets of the 'circle,' and they have to return their stamp, without compensation, to the 'circle' chairman.

"No. 15. The board of directors of the circle consists of an uneven number of members, and they are elected at the general meeting.

"No. 16. The work of the directors is to take care of the business of the 'circle' in the best manner possible, thus seeing to it that the eggs are delivered to the association in the condition demanded. The 'circle' directors appoint and discharge the egg collector and other employees of the 'circle,' determine their compensation, and supervise their work. (Their pay is generally 27 cents per 100 lbs. eggs for collecting. — J. H. M.)

"No. 17. The general meeting elects annually two auditors who audit the year's account before the end of January the following year.

"No. 18. The regular annual meeting is held in the first part of February in time for eventful suggestions to the main directors to be submitted to their chairman before Feb. 20.

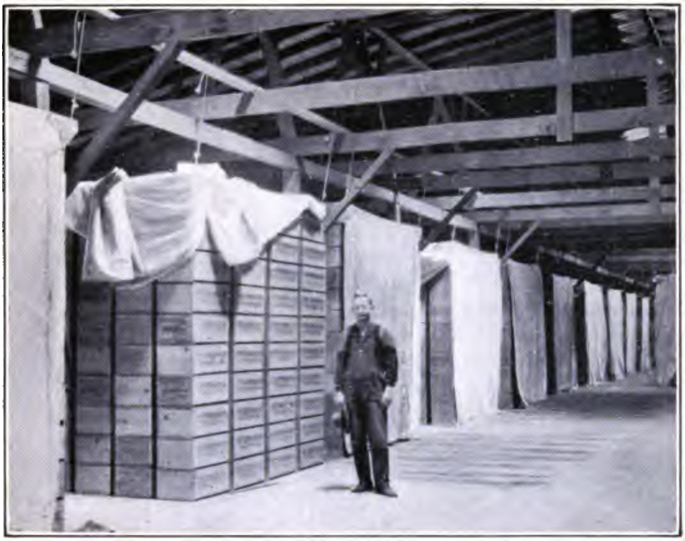
"No. 19. The 'circle' sends a delegate to the general meeting of the main association.

"No. 20. In case of an eventful dissolution of the 'circle,' any possible surplus — after settling all liabilities — is to be divided between the members in proportion to the eggs delivered by them during the last year."

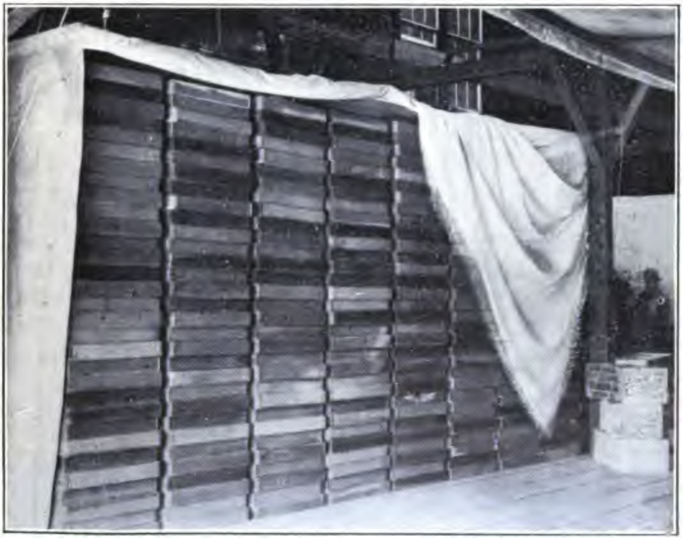
The main association elects at the annual meeting seven members as representatives. A Board of Directors is composed of four of the representatives. A Chairman is also elected who serves for two years. The directors serve for five years. The executive committee of the association consists of the Chairman, the Manager, and one member.

As an illustration of the growth of the Danish Coöperative Egg Export Association may be cited the fact that in 1909 it sold 7,750,789 pounds of eggs abroad besides 1,258,582 pounds at home and in addition 462,504 pounds

PLATE X. — Curing-tents for Lemons. Chapters IV, VIII.



Lemon Curing-tents, showing Fruit Stored in Boxes.



Lemon Curing-tents, showing Fruit Stacked in Trays.

of cracked eggs. The average price for the eggs was 12.86 cents per pound, amounting to $1,233,115.03. The average price paid to the patrons, including the surplus, was 12.02 cents per pound.

At the annual meeting of the association in 1910 the payment of the initial membership fee of 14 cents was abolished because the reserve fund at that time amounted to $81,000.

The Agricultural Department of Canada has been active in studying the coöperative marketing of eggs. Professor F. C. Elford said in a public address in 1910: "The work of the association (the Poultry Producers' Association of Eastern Canada) is to get the producers to form coöperative collective circles such as they have in Denmark and other European countries. At these circles one man would receive, grade, and market the produce for the community, and all such circles would have a uniform system. Both the Dominion government and the Quebec government have taken up the matter and are doing what they can to forward the coöperative work."

In Australia one state has twenty-one egg circles consisting principally of small farmers. The Secretary of each center receives, tests, and grades the eggs, pays cash for them at the current market rate, and sends them to the government cold stores. The government does the marketing and at the end of each quarter any profits are divided among the suppliers. The Secretary of each center receives one cent per dozen for the eggs he handles. Under this method there is no middleman's profit.[1]

---

[1] *N. Y. Produce Review and American Creamery*, v. 29, No. 12, January 12, 1910.

COÖPERATION IN THE COTTON INDUSTRY

The annual cotton crop of the United States amounts to twelve million bales. It is grown on thirty-six million acres, Texas, Georgia, Alabama, Mississippi and Oklahoma and Indian Territory ranking foremost in importance among the cotton-growing states. The annual value of the cotton crop, including the lint and the seed, amounts to more than three-quarters of a billion dollars. The value of the exports of American cotton equals half a billion dollars, or approximately one-half the total annual value of the exports of all domestic farm products.[1]

Conditions Surrounding the Cotton Industry

One of the greatest economic problems that has faced the South is the annual financing of the cotton farmer. There are several kinds of farmers engaged in cotton growing, the large land-owner, who manages his own property, the large estate that may be sublet to tenants or is managed under some form of superintendence, and the small farm managed either by an owner or by a tenant. The large land-owner usually is able to finance his operations through regular banking channels, but with the small farm owner or the tenant the case is different. The average small farmer has no surplus capital with which to develop his place or to carry on his annual operations. His assets are small, and he can furnish little security for credit except the growing cotton. He usually obtains credit from the local storekeeper and gives a lien on the crop as security for the bill which he accumulates during the season at the store. To meet these credit demands he is obliged to turn his cotton over to the storekeeper at the gin as soon as it is harvested; and to protect himself the storekeeper has to charge the cotton grower a high price for everything he purchases. The farmer may borrow money from a cotton factor in which case he ships the ginned cotton to him to be sold on commission.

---

[1] Year Book, U. S. Department Agriculture, 1911.

The small tenant farmer is in an even more helpless condition than the small farm owner. The stock, the feed, and the tools are furnished by the land-owner. He has a still smaller security to offer for credit. The local merchant gives him store credit and takes a lien on his share of the crop for security, placing the tenant farmer between two millstones — the owner, on the one hand, who is interested in large crops, and the storekeeper, on the other, from whom he secures credit at a high rate of interest.

Since the advent of the boll weevil, the Southern farmer, through the efforts of the United States Department of Agriculture, has introduced a more diversified crop system, including corn, alfalfa, peanuts, and stock-raising, and, to some extent, this has relieved the distressing financial condition by giving the cotton farmer something besides cotton to fall back on. Taken as a whole, the Southern farming system has compelled the farmer to sell his crop as soon as it is harvested at such prices as the local merchant is obliged to pay. It results in the almost complete separation of the producer from any part in the marketing of the crop. It depresses the prices of cotton in the fall by forcing it all on the market at one time, and the subsequent advances in prices are absorbed by the various middlemen through whose hands it passes from the local merchant to the mill. Since the work of the Department of Agriculture was started it is said that the number of farmers who pledge their crops as security for loans, is rapidly decreasing. The growers are beginning to sell their own crops to local buyers, to traveling buyers, or in other ways.

The Cotton-Distributing System

The distribution of the cotton crop from the producer to the spinner is one of the most complicated of the American farm crop distributing systems. The cotton crop is sold at the gin or in lots of a few bales of about 500 pounds each at a station to the local merchant, to jobbers, or to representatives of the cotton merchants, or to representatives of the mills. After the bales have been compressed the bulk of the cotton crop is then assembled in a number of interior cities or towns, among which are Houston, St. Louis, Memphis, Augusta, and Cincinnati, and about twenty other more or less important centers, where it is graded and classified and where the manufacturers, the merchants, or the buying agents, the speculators, the exporters, the factors or commission merchants, and others compete on the cotton exchanges for their supplies. The distribution is made still more complex by the cotton exchanges and boards-of-trade, the members of which, through the sale of future contracts, spot contracts, short selling, and other forms of dealing pass the rights to the cotton from party to party until it finally enters the mill. The average producer is the least important factor in the distribution and marketing of the crop. He grows the cotton, is obliged to sell it as soon as it is harvested and ginned to satisfy his credit demands, and there his relation to it usually ends.

The Dissatisfaction of the Cotton Farmer

The cotton farmer has not been satisfied with his relation to the cotton-distributing system. A few years ago the price of cotton was more or less depressed, and this condition was charged to the manipulations of the various middlemen through whose hands the crop passes. It was charged also to a relative overproduction. The farmer who has had to sell his crop as soon as it is baled has been in a helpless condition, and as long as he depended on the local merchant or the cotton factor for credit he could not disentangle himself. The farmers have therefore organized into associations, they have built warehouses in which to store the cotton until it can be marketed favorably, and they have federated these warehouses into larger selling agencies. Because of the security that the cotton in the warehouse furnishes, they have been able to obtain money through regular banking channels, and they have attempted to influence the total production of cotton by reducing the acreage grown by each member.

The Farmers' Union

The most important efforts along the lines described have been made by the Farmers' Educational and Coöperative Union of America, usually known as the "Farmers' Union," and the "Southern Cotton Association," although the latter organization is no longer active.

The Farmers' Union is a national body with 3,000,000 members, with an organization in each state in which it operates, with subsidiary county organizations and still smaller subdivisions called "local unions."

The Farmers' Union is a fraternal, educational, social, and business organization. It is a secret organization with signs and passwords. It adopts a legislative program, urging that Presidents, Senators, and Supreme Court justices be elected by direct vote of the people, and it pushes other reforms which it believes to be in the interest of the people. Through corporations which it forms it operates warehouses, gins and fertilizer plants, purchases supplies, owns newspapers, and engages in other business enterprises.

The first local union was formed in Texas in 1902, the national organization was formed in 1905, and in 1909 it had state and local organizations in Alabama, Arkansas, California, Colorado, Florida, Georgia, Idaho, Illinois, Iowa, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Nebraska, New Mexico, North Carolina, Oklahoma, Oregon, South Carolina, Texas, Virginia, and Washington.

The Charter. — The principal features of the charter of the Farmers' Union follow: —

1. The name of the Corporation shall be "The Farmers' Educational and Coöperative Union of America."
2. The purpose for which it is formed is to organize and charter subordinate Unions at various places in Texas and the United States to assist them in marketing and obtaining better prices for their products, for fraternal purposes, and to coöperate with them in the protection of their interests; to initiate members and collect a fee therefor.

Principles of the Union. — The principles of the Farmers' Union are set forth in the following declaration: —

Speculators and those engaged in the distribution of farm products have organized and operate to the great detriment of the farming class.

To enable farmers to meet these conditions and protect their interests, we have organized the Farmers' Educational and Coöperative Union of America, and declare the following purposes: —

To establish justice.

To secure equity.

To apply the Golden Rule.

To discourage the credit and mortgage system.

To assist our members in buying and selling.

To educate the agricultural class in scientific farming.

To teach farmers the classification of crops, domestic economy, and the process of marketing.

To systematize methods of production and distribution.

To eliminate gambling in farm products by Boards of Trade, Cotton Exchanges, and other speculators.

To bring farmers up to the standard of other industries and business enterprises.

To secure and maintain profitable and uniform prices for grain, cotton, live-stock, and other products of the farm.

To strive for harmony and good will among all mankind and brotherly love among ourselves.

To garner the tears of the distressed, the blood of martyrs, the laugh of innocent childhood, the sweat of honest labor, and the virtue of a happy home as the brightest jewels known.

Membership in the Union. — The membership in the union is confined to farmers, farm laborers, rural mechanics, rural school teachers, physicians, or ministers of the gospel, who are not engaged in banking, merchandizing, practicing law, or belonging to any trust or combine for the purpose of speculating in agricultural products or the necessities of life, or directly affecting injuriously the agricultural interests. The members are elected by ballot and are subject to blackball.

A State Union must have a membership of 5000 men before a charter is granted, and no union is organized with less than five male members. The National Union is composed of its officers and one delegate for each five thousand members or majority fraction thereof. The constitution declares: "The National Union, when assembled, shall adopt and declare minimum prices on all farm products which may be sufficiently in control of the membership to give reasonable grounds for hoping to maintain said prices." The National Union has committees on minimum price on both short and long staple cotton and on various other products which its members produce. It does not dictate the policy of the state and local unions. It makes recommendations, and each member is morally, though not legally, bound to follow the recommendations made.

Efforts of Growers to Reduce the Acreage of Cotton

The cotton farmers have gone to greater lengths in endeavoring to influence the price of a crop than any other class of American farmers. In 1905 the price of middling cotton was below 7 cents per pound. The President of the Southern Cotton Growers' Protective Association, Harvie Jordan, at the convention in New Orleans in January, 1905, urged that the acreage be reduced as a means of improving the conditions in the cotton trade. In this connection Mr. Jordan said:[1] —

---

[1] Report of the Commissioner of Corporations on Cotton Exchanges, Part V, pp. 329–330.

"We must learn to market the crop slowly, regulating the supply to meet the legitimate demand; break up the power of the speculator, and take care of the people ourselves.

"The bankers of the South must stand behind the producers in this fight, and let the whole world understand that the South can and will control the sale of her products in the face of all the combinations that may be brought against her. We must, and will, reduce the present cotton acreage from 25 to 40 per cent on every cotton farm in the South for 1905.

"We must, and will, curtail the use of commercial fertilizers under cotton correspondingly with the percentage of reduction in acreage.

"Instead of planting 32,000,000 acres, as in 1904, plant not more than 24,000,000 acres, and make this year not more than 8,500,000 or 9,000,000 bales. This course, if pursued, would enable the present unsold crop to sell for a reasonable price, and assure the crop of 1905 to be profitable.

"The farmer who, under existing conditions and in the face of the great financial peril which confronts the South, deliberately refuses to materially reduce his cotton acreage and increase his food-supply crops is an enemy to himself and a traitor to his country.

"The merchant or banker who will deliberately furnish supplies or money to any man to plant an extended acreage in cotton this year deserves the deepest condemnation and literal ostracism of the entire community in which they do business."

The sentiments expressed by Mr. Jordan were adopted by the convention, and it further urged all growers to hold their cotton "until the government reports on acreage show to the world that Southern cotton farmers stand solidly together, that they have complied with their agreement, and demand the value of their product." Following this agitation the acreage of cotton in 1905–1906 was reduced to 26,999,552, from 31,370,371 acres in 1904–1905, while the price was raised from 8.85 cents per pound in 1904–1905 to 11.07 cents in 1905–1906.[1]

The Farmers' Union also favored the reduction in the acreage of cotton, though this reduction has not been so aggressively pushed by that organization. The President of the union, however, in the spring of 1908 issued a circular[2] in which he urged the members each to plow up from one to ten acres of cotton on the 15th of May and plant peas.

The Maintenance of Prices by Organizations of Cotton Producers

The Farmers' Union has endeavored to maintain the price of cotton by naming the minimum price below which the members shall not sell and by constructing a chain of warehouses in which the cotton can be stored, and which shall be an aid in financing the members. In 1904, a minimum price of 10 cents was named;[3] in 1905, a minimum of 10 cents per pound, basis middling, at interior points, and this was later raised to 11 cents; in 1906–1907, a minimum of 11 cents per pound was named; in 1907–1908, a minimum of 15 cents at interior points; and in 1908–1909, a minimum of 12 cents. Similar efforts were made to maintain the price of cotton by the Southern Cotton Association during its active existence.

---

[1] Report of the Commissioner of Corporations, p. 333.

[2] *Ibid.*, pp. 336–337.

[3] *Ibid.*, p. 340.

The Farmers' Union has 1600 warehouses in the cotton states in which a small fraction of the total cotton crop is stored. These warehouses are usually organized as separate corporations or in unincorporated form. They are built so that the members can store their cotton until the minimum price is reached. They are used also to facilitate loans on the stored cotton as collateral, the warehouse company being able to secure more favorable credit terms than the individual members can obtain. The union is now endeavoring to consolidate the various warehouses in the states under central companies, which act as agents for the local warehouses in marketing the crop. The warehouses in Mississippi are brought together in a million-dollar corporation[1] and this has been joined by the Tennessee warehouses.

The Effect of the Farmers' Organization on the Price of Cotton

The Farmers' Union has been severely criticized as an organization which restricts competition and is in restraint of trade, and, therefore, contrary to the "Sherman Antitrust Law." On this point the Commissioner of Corporation says:[2] —

"Owing to the multitude of causes affecting prices of cotton it is exceedingly difficult to determine the effect of any specific cause, and anything like a precise measurement of such effect is impossible. Thus, in the case of the Farmers' Union there is absolutely no means of determining to what extent the time of selling or the price received by the producer was affected by the action of the union in recommending the minimum price. It follows that it is not only impossible to tell whether individual producers gained or lost as a result of this minimum-price policy, but also whether the course of prices was at all influenced by that policy.

---

[1] Testimony of T. J. Brooks, Report of the Committee on Interstate Commerce, vol. 11, p. 2340.

[2] *Ibid.*, pp. 29–31.

"For instance, in the season 1906–1907, the Farmers' Union named a minimum price of 11 cents; in September of that year middling cotton in New Orleans was quoted at about 9½ cents. It advanced in October to above 11 cents, and during most of the period from October to May the price fluctuated between 10½ and 11 cents, while still later in the season it advanced to over 13 cents. This does not necessarily mean that the price policy of the Farmers' Union was the dominating influence in this advance. In 1906–1907 the demand for cotton was exceedingly active.

"In the season 1907–1908 the Farmers' Union recommended a minimum of 15 cents per pound, whereas, except in September (when the New Orleans price touched 13.56 cents), the price of middling at New Orleans in this season never exceeded 12½ cents, and frequently fell below 11 cents, and at times below 10 cents. On the other hand, in this season there occurred the panic of 1907, while other causes operated to counteract the efforts of the Farmers' Union. While, therefore, a comparison of the price of middling cotton at New Orleans with the minimum price recommended by the union in that year might suggest an absolute failure of the minimum-price policy, it is not possible to say that such was the case, for the reason that it cannot be determined whether the action of the union did not prevent the price from going lower than it otherwise would have gone. Statistics suggest that the efforts of the union affected the movement of the crop in that year.

"*Warehouse Policy of Farmers' Union.*—In line with its recommendation for holding cotton for minimum prices, the Farmers' Union has entered somewhat extensively upon the policy of constructing and operating warehouses throughout the cotton belt. One object of this policy is to provide means for storing cotton where it may be held for a rise in price. There is no official provision, however, which compels a member either to deposit his cotton in such a warehouse or to keep it there until the minimum price is realized. Another object of this warehouse scheme is to facilitate the borrowing of money on cotton as collateral.

"A large number of warehouses have been established by union members in different localities. It was estimated in the early part of 1909 that there were at least 1500 of these local warehouses. Most of them, however, are comparatively small. An important step recently contemplated by the union is the consolidation of these various warehouses into consolidated companies in the respective states, and furthermore the consolidation of these state consolidations into a single warehouse company or the operation of these state consolidations by joint control under union auspices. The scheme as outlined amounts to a combination either along the lines of the trusts of early days or of the large corporate consolidations of the present time. As such it must be regarded as another expression of the operation of economic forces as maintained in the consolidation movement in other branches of industry. Should this movement take tangible form, it is conceivable that the consolidated company might control enough of the crop to make the union a factor of decided importance in regulating cotton prices. At the present time, however, this movement is in such a preliminary stage that its ultimate outcome cannot be estimated.

"Both producers' associations have been criticized by some interests in the cotton trade, particularly the Farmers' Union, which has been repeatedly referred to as 'a farmers' trust.' Some criticisms of the union are undoubtedly deserved. On the other hand, no satisfactory conclusion can be reached because of the complexities of the situation. Many of the policies of the two associations, however, are reasonable and calculated to benefit the cotton trade. Thus, the urging of producers to practice diversification of crops is wholly commendable, and any action within the law that looks to an improvement in the condition of producers is not justly to be criticized.

"Many of the severest criticisms of the Farmers' Union have come from spinners. It is worth noting, therefore, that just as this report goes to press a very comprehensive movement has been undertaken by spinners, both in this country and abroad, looking to a material reduction in the consumption of cotton on account of the prevailing high prices. The exact significance of this movement cannot be stated at this time, but apparently the curtailment contemplated is designed to be of sufficient importance to affect the price of cotton."

The Commissioner further says: "On the other hand, attempts to fix arbitrary prices for the crop are not only ill advised, but in so far as they are accompanied by concerted action or agreement are open to the same criticism which would apply to similar combinations."

Economic Mistakes of the Cotton Growers

From another standpoint, the efforts of the union to reduce production by restricting the use of commercial fertilizers is an economic mistake. The smaller use of fertilizer is followed by smaller yields per acre, which therefore increase the cost of producing the cotton per pound. Low yields mean high unit costs, while intensive tillage usually reduces the cost of production.

The reduction of the acreage by the cotton farmer is said to have stimulated the efforts of the European spinners to develop cotton production in Africa and other tropical countries. The activities in the German spinners' association and the English spinners' association were stimulated in the beginning largely by the fear that the American cotton supply would be cut off from Europe by the advent of the boll weevil, by the development of the spinning industry in America, and by the combinations of American growers.

Looking at the future of the cotton industry, it would seem that the efforts of the cotton producers to reduce the acreage or to fix a minimum price are superficial remedies for the unfortunate condition of the cotton farmer. They do not strike at the root of the Southern agricultural situation. The fundamentals needed are a more diversified crop system, smaller farms managed by their owners, and the development of the coöperative system, with local unions and larger federations through which the producer can develop a comprehensive system of credit and a system of distribution and marketing between himself and the spinner, thereby eliminating the costs of the present complex system of distribution, giving the producer a larger share of the price which the spinner pays for the cotton and placing him on a more independent plane of citizenship.

CHAPTER VIII

COÖPERATION IN THE HANDLING, DISTRIBUTING, AND SALE OF FRUIT

There is a vital power behind the Western fruit-growers' associations that is to be found in no other coöperative movement in the United States, possibly because they have the greatest difficulties to overcome. The class that most nearly approaches the fruit-grower is the grain-grower of the Central West, who was forced to organize the farmers' elevators for protection against a predatory grain-marketing system. Some coöperative creameries have been formed as a business necessity, but more often through the effort of the agents for creamery supplies. These associations, like the stallion company system, have been organized, not by the farmers, but by those who desire to sell the appliances in which they are interested. The fruit-growers' associations have been formed in order that the capital invested in the industry might be protected. The growers could not consign their products to commission merchants two thousand miles or more away; they could not depend on local or distant buyers to pay a fair price for the fruit; as individuals they could not deal effectively with the railroads or with the courts. They had to organize as a matter of necessity. In no other way could their industries be developed.

THE FRUIT-DISTRIBUTING SYSTEM

The cost of distribution of the fruit crop of the United States from the producer to the consumer usually equals about one-half of the price which the consumer pays for the product. The distribution costs include the freight, the different selling charges of the brokers, jobbers, commission merchants, and retail dealers, and the various local distributing charges. Apples that bring the producer $2 a barrel, retail at the rate of $4 to $8 per barrel. Lemons that cost the producer seven to eight cents a dozen to grow, cost the consumer twenty to thirty cents a dozen, the producer, the transportation lines, and the other distributing agencies each getting about one-third of the retail price. The cost of distribution, if excessive, affects the profits of the fruit-grower by reducing consumption and by giving him a small share of the price which the consumer pays for the fruit. The conviction has been growing that the system of distributing farm products has become so complicated and cumbersome as to form one of the leading factors in the increase in the cost of living and in reducing the profits of the producer below that which his capital and labor warrant. There is a general inquiry into the cost of distributing food products in the United States, and producers and consumers are looking into the methods of farm crop distribution more critically than ever before with a view to determining how these charges affect the farmer's interest and the cost of living.

Agencies of Distribution

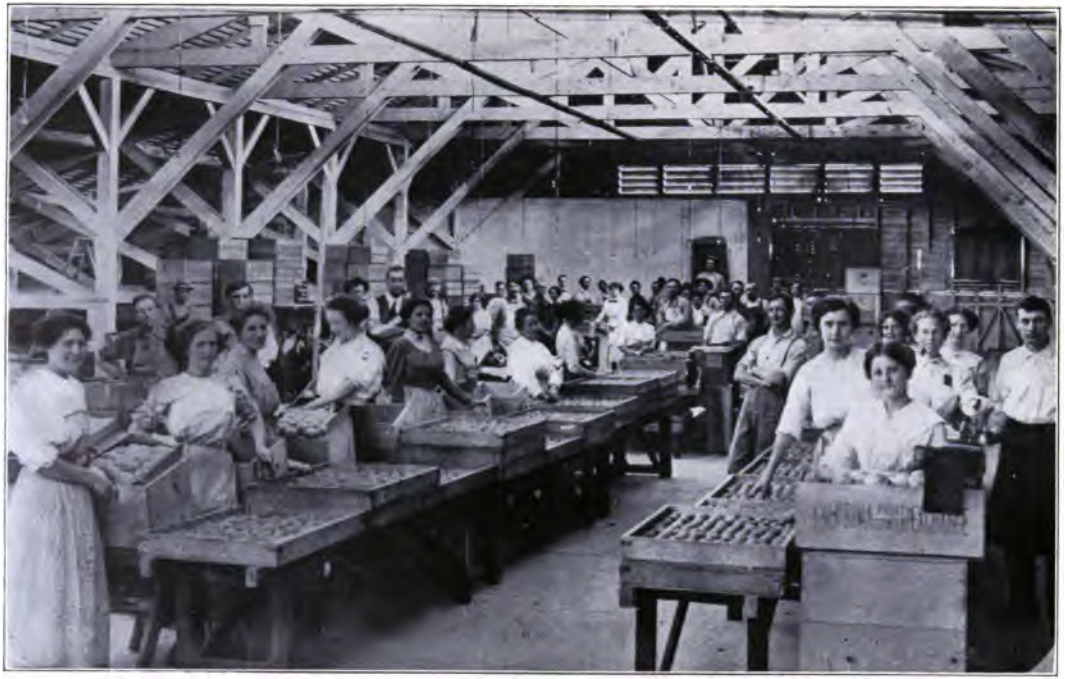
The fruit crop is distributed from the producer to the consumer by brokers, jobbers, fruit-distributing and marketing corporations, soliciting agents, local buyers, commission merchants, and retail traders such as venders, fruit stands, market places, and retail stores. The distributing facilities also include the transportation lines over which the produce is shipped, the auction houses through which the fruit may be sold to the jobber and to the retail trade, the market places, and the warehouses which may be used as assembling points and centers of distribution. There is a wide variation in the number of steps through which the fruit crop has to pass in its journey from the producer to the consumer. Occasionally the producer delivers it direct to the consumer. In some localities, like Philadelphia, it may be sold through a public retail market where the consumer buys direct from the farmer as well as from the dealer. The system grows more complex and the expenses of marketing increase when the commission merchant, the jobber, the local and traveling buyers, and salesmen, general merchants, and exporters are added to the scheme of distribution and marketing. It becomes bewildering to the average person when he finds that there are no hard-and-fast lines which separate any of these agencies from another and that their functions overlap or may be identical. Perhaps the scheme of fruit distribution and marketing may be made more clear by a brief description of the several agencies.

The Broker. — The broker is an agent who acts between the owner of the fruit and the jobber in placing it with the latter. He solicits orders from the wholesale fruit trade and then secures the fruit from the producer or from a local buyer to fill the order, receiving a brokerage commission from the owner of the fruit for handling the transaction. Sometimes the brokerage is paid on a package basis with a bonus in addition. The fruit broker usually handles carload lots only. He is not supposed to buy or sell on his own account, and he places the fruit exclusively with the wholesale trade. Some of the brokers are receivers of fruit, and sometimes they act as jobbers as well. Many of them speculate in the products which they handle as brokers. There are many brokers who travel and who sell the surplus supplies in the primary markets to the outlying trade. The broker charges from three to five per cent on the gross sales.

Fruit-distributing and Marketing Corporations. — A fruit-distributing and marketing corporation acts as a brokerage agency in distributing and marketing the fruit of growers or of associations of growers or in providing the facilities through which they may distribute their own crops. These corporations may be organized by the growers on the coöperative plan and operate for their members at cost, or they may be formed by the growers, by the trade, or jointly as stock corporations to make a profit on the capital invested by distributing and marketing the growers' products on a percentage basis or on a fixed price per package.

The corporations organized for profit may be located at the point of production or in the centers of consumption. They sell the fruit for the growers to the wholesale trade for cash F.O.B., or subject to inspection on arrival, on

PLATE XI. — Lemon Grading and Packing. Chapters IV, VIII.



M 10 U

delivery on special orders, through auction companies, or in any other way. As a rule, these corporations are not supposed to buy and sell the products which they handle as agents for their clients, though in practice many of them do act as buyers and commission merchants as well. These corporations charge from five to ten per cent on the gross sales.

The Jobber. — A jobber is a wholesale fruit dealer. He buys the fruit from the producer, from a dealer, or through a broker and sells it to the retail trade. In a given transaction one jobber may intervene between the producer and the retailer, or there may be two or more of this class of middlemen, including the traveling solicitor, the local jobber, or the local merchant who may act as a broker or a jobber and through whom the city jobber may purchase his supplies. A jobber may be a commission merchant also, many of the jobbers in the cities acting in both capacities.

The Commission Merchant. — A commission merchant is an agent who sells fruit for the owner direct to the stores, venders, peddlers, hotels, and other retail establishments; occasionally he may sell through an auction company. He sells the fruit in original packages in the quantities desired by the trade. He receives it on consignment and charges the owner, who may be a producer or a local dealer, a commission varying from five to ten per cent on the gross sale of the consignment, though the commission varies with different commodities and in different markets. A commission merchant, strictly as such, does not buy or sell on his own account, though in practice there are few commission merchants in the United States who are not jobbers as well. A recent canvass of the fruit commission merchants in one of the large cities developed but one who was not a dealer in the products which he was handling for other people.

The Auction Company. — An auction company is formed to sell produce for the owner or his representative to the jobber, or to the retail trade, the buyers purchasing it in open competition. The auction companies may be organized independently, but are usually formed by members of the trade. The auction company may be located at the shipping point, or in the cities to which the produce is shipped. Nearly all imported fruit is sold at auction at the point of entry, and a great deal of the fruit of the Pacific coast is sold in this manner in many of the larger cities. The owner of the fruit is charged from one and one-half to five per cent on the gross sales. The auction company, like the commission merchant, acts as an agent for the owner of the fruit or for his agent. The former sells to a large number of buyers through public sale, the latter to a few buyers usually at private sale. The auction company may also be a dealer in the products which it sells for its patrons. It may be engaged, either directly or indirectly, in financing its clients, in handling the products on joint account with its patrons, or in the purchase of products to be sold in competition with those of its clients. Many of the auction companies are formed by members of the trade who may either sell the fruit to themselves, thereby making an extra profit for themselves through the sales, or the company may be an open auction and sell to all buyers. In some companies the firms who are the stockholders act as agents in that market in handling shippers' accounts. Under these conditions members of the trade who are not stockholders or shippers who have agents not represented by the stockholders may not be able to buy or sell through the auction, because the sale of the fruit may be manipulated to protect the stockholders and to discriminate against their competitors. In one of the eastern cities all of the members of the wholesale fruit trade are stockholders in an auction company and agree among themselves not to buy except through auction sales. This arbitrary attempt to restrict the sale of fruit has resulted in keeping the better grades of fruit out of this market. It has also resulted in the recent indictment of the members on the ground that the combination acts in restraint of trade. An auction company in a small market usually results in an artificial condition of trade because the stockholders, who are the trade itself, can manipulate the condition of the sales in such a way as to give them an extra profit.

The Warehouseman. — The warehouseman acts as a trustee in storing products for his clients until they are sold. He is a part of the system of distribution of the food supplies of the nation, the warehouses serving as reservoirs in equalizing the supplies throughout the year. The producer, the jobber, the commission merchant, or any one else who wishes to store his product to be sold at a later date, contracts with the warehouseman for space in which the goods are stored. The warehouseman is in a position to know about the food supplies of a city and of the amount held by different people who have goods in his warehouse. He is supposed to treat everybody alike in so far as his relations to the public are concerned, and he is not supposed to deal in the products, which, as a trustee, he is storing for other people. Many of the warehousemen of the United States are dealers in the products which they store. They frequently finance the operations of their clients; they buy poultry, butter, eggs, and fruit on joint account with their clients. They may invest in the corporations of their clients, or their clients may be interested in the warehouse corporation, or they may buy and sell these products independently.

The Retail Trade. — The retail dealers sell the produce to the consumers. They may buy it from the producer direct or through brokers, jobbers, commission men, or auction companies. The retail trade is composed of a widely variable class of people, including the stores, the fruit stands, the push-cart men, and other kinds of venders.

These are the principal avenues by which the fruit trade of the United States is handled. The farmer grows the fruit and takes all the risks of production. He sells it to a local merchant or buyer or through a broker or a commission merchant. The return which he receives depends upon his skill as a producer, his honesty and efficiency in handling, grading, and preparing the product for sale and the efficiency and honesty of these different agencies which bridge the stream between him and the consumer. The responsibility of the producer usually ends when his crop is ready for sale, unless he develops his own distributing system. It generally terminates at the farm or at the local railway station, where the crop is sold to the local buyer or to the representative of a distant buyer. If there is free competition among the buyers and the product is handled fairly by the agencies mentioned, the producer may receive a fair price for it. If the prices are artificially fixed, or if the agencies which represent him are in competition with him, then he receives only that which the combination is willing to pay. These different agencies strive to increase the use of fruit so that their profits may be increased. They have agents in the field to secure business, and agents in the cities, and traveling agents in the smaller places to develop trade. The local buyers, the jobbers, and the brokers push their business in every way known to such agencies, though no comprehensive system of distribution is possible under this plan of farm-crop marketing. The commission merchants seek to enlarge their trade by soliciting consignments from the producer and by attracting buyers to their stores. The auction companies develop their particular function, while the retail trade encourages the consumer to use the greatest possible amount of the produce.

The fruit trade has been developed through the activity and competition of these different agencies. They have created a rapidly increasing demand for fruit as a staple article of food and have made it possible for the producer to develop millions of acres of land that have been planted to orchards in recent years. On the whole, the fruit trade of the United States is in the hands of men of integrity, business energy, and resourcefulness. In these respects they equal any other class of men who deal in the products of the soil. There are exceptions to this rule, as there are in every class of business, and dishonest and reprehensible practices have crept into the brokerage, jobbing, commission, auction, warehouse, and retail trade which sometimes throw suspicion on the entire distributing business.

The fruit trade lends itself peculiarly to dishonest practices because the operations of these agencies, some of which are of a semi-public nature, are usually unregulated by law and because the return which the producer receives may depend entirely on the honesty and business integrity of the agent who handles his business.

ABUSES IN THE FRUIT TRADE

There are a number of conditions in the fruit trade as well as in the sale of other farm crops which affect the interests of the producer adversely and which he is powerless to overcome when acting alone. A broker sometimes acts as a jobber also and sells the product to himself to be sold later at a higher price, thereby dishonestly returning to the producer proceeds below the value of the fruit. As an example, a commission firm with high standing in the trade, recently contracted to act as a brokerage agent in the distribution of cantaloupes for associations of growers. The firm advanced money to grow the crop and furnished seed and supplies to the growers. Many of the cantaloupes were sold to the jobbing trade, others were consigned to commission houses, while others were reported sold at some distant point at a low price, the agent explaining to the producer that the fruit arrived in poor condition or that the market was bad in other respects. It was discovered by the growers that many carloads of the cantaloupes actually arrived in good condition, that they were bought by the firm who was acting as their agent at a low price, and that later they were diverted to another market where the fruit was sold at a higher figure. The revelations following these dishonest practices caused the downfall of the firm, and as it stood high in fruit-handling circles, its dishonesty caused the producers to distrust firms of similar standing. The practice of receiving a brokerage from the jobber as well as from the owner of the fruit for whom the broker acts, is another practice which acts to the detriment of the producer by lowering the price which he might have received for his product.

One of the most serious conditions that the producer has to meet is the frequent agreement among buyers to fix a maximum price to be paid for the fruit. This is not an uncommon practice among those who buy fruit in the orchards or at a shipping station. Under these conditions all of the fruit is sold at a low price, and the grower with unusually fine fruit is offered the same price as the grower having fruit of medium quality. This practice among buyers is one of the leading factors that has caused the formation of the coöperative fruit-growers' associations throughout the United States. In other instances the buyers divide the territory among themselves and pay similar prices to the growers in each territory. When these conditions exist, competition is eliminated, trade is unnaturally restrained, and the producer must either take the price offered by the broker, consign his fruit to a firm which may also be a buyer of the same product, hold it for better market conditions later in the season, or else unite with other producers to protect his interests. The producer's condition is still further complicated by the jobbers when they contract for all the space in storage plants in the large cities, and further still when the warehouseman, either directly or indirectly, becomes a jobber in the products which he stores as a trustee for these people, or when they form trade combinations in the markets through which they agree on a maximum price to be paid for the produce.

The dishonest commission merchant is one of the most serious difficulties that the producer has to meet. There are few lines that are more attractive to the unscrupulous man than the commission business. His business is unchecked and unregulated. The unscrupulous merchant can and often does overquote the market in soliciting shipments, and he returns to the producer as much or as little as he pleases, with small chance of having his dishonesty discovered. There are many commission merchants who have built up enviable reputations for business integrity. The National League of Commission Merchants endeavors to eliminate dishonest practices from the commission trade, but on account of the unlimited opportunity for fraudulent dealing, the commission business attracts an unusually high proportion of unscrupulous dealers. These men have cast discredit and suspicion on the entire commission business which has led to a growing demand that the operations of the commission merchants, as well as those of other semi-public distributing and marketing agencies who handle produce entering interstate commerce, shall be subject to federal regulation, and that the states and local authorities shall prescribe the conditions under which these different agents who conduct an intra-state business shall transact their operations.

A still more serious difficulty lies in the fact that most of the commission firms are also jobbers in the products which they handle on commission for the public. In that capacity the commission merchant is a competitor of the growers for whose interests he is acting as an agent. It is a common practice for the commission merchant who receives apples on consignment to transfer them to his own account at a low price. He then becomes a jobber and a speculator. He holds the fruit for a few days or weeks in storage and sells it at an advanced figure. This practice is justified by many commission merchants on the score that the fruit is purchased at the prevailing market value. The practice, however, is open to the most flagrant abuses, and a shipper's interest is the first to suffer when it comes into competition with the investment of the commission merchant in the capacity of a jobber. This dual capacity of the commission merchant and other agencies of distribution, next to the making of dishonest returns, is the cause of more distrust on the part of the producer than any one abuse in the fruit trade. The feeling is growing that as a matter of public policy no individual or firm which acts as an agent for the producer ought to have the legal right to speculate in the same produce. These agencies are charged with protecting the interests of their clients, but no agent can discharge his duties faithfully where his own product comes in direct competition with the product of his client.

A flagrantly dishonest practice that is sometimes followed by commission firms is the repacking of the product into more packages than the original consignment contained. Potatoes are sometimes taken from the sacks, a seam sewed across the bottom in such manner that six of the original sacks fill seven. Oranges are sometimes repacked so that ten boxes received from the shipper fill twelve boxes; other products are treated in a similar manner. The producer receives returns on the number of boxes originally shipped, the excess due to the repacking going to the merchant. The merchant often justifies the practice on the ground that he has been forced by business competition into methods that he himself condemns. It is not an uncommon practice for the commission merchants in some cities to repack peaches from one-fifth Climax baskets into one-sixth Climax baskets. Formerly when the peck basket was the standard size, the commission merchants repacked the peaches in baskets holding a fifth of a bushel. This practice finally led the Michigan peach-growers to adopt the fifth bushel as the standard size. The merchants then reduced the size into which the fruit was repacked to a sixth of a bushel. The result of these practices is that the producer pays proportionally more for the small empty package, — it costs more for packing, handling, and for freight, — while the relative value of the fruit remains as it was before.

A difficulty that frequently affects the shippers' interest is the absence of free, open competition in some of the auction markets. When every buyer and shipper has equal rights in the auction, this system of crop sale may be an advantage both to the shipper and to the buyer of fruit in the large cities. But all auction sales in the United States are not handled in this manner, especially in the smaller markets. Instead of operating as semi-public agents for all shippers and buyers, some of these companies are formed by the trade for the purpose of controlling the sale of fruit in one or more cities in the interest of the buyers who are the stockholders, or in the interest of the shippers whose agents are the stockholders. Under these conditions an auction company has the power of discriminating unjustly against both the shipper and the buyer, and, when left unregulated by the state or federal authorities, may operate as a predatory organization in the restraint and control of trade. At the present time it is impossible for many shippers to sell their produce through the auctions in some of the cities unless they employ a commission firm or other dealer who is a stockholder in the auction company to act as their broker in that particular market.

The American farmer cannot afford to occupy a position where the returns for his labor and capital are dependent on the unregulated action of the agencies that distribute the products of the farm. To protect him against the abuses of the transportation companies, the federal and state governments have passed laws and have prescribed rules and regulations governing the charges which these companies may exact and the methods of conducting their business operations. When left unregulated, they failed to protect the interests of the people.

There is an increasing demand on the part of the public that similar restrictions should be prescribed by the federal government, by the states and by municipalities as regards those who act as semi-public agents in the distribution and marketing of the nation's food supplies. In some states they are demanding an official inspection of the product on arrival and that these semi-public agents should be obliged to keep their records uniformly and in such manner that they are always open to the authorities and to any one who has a proper reason for inspecting them. The farmer as an individual is helpless in meeting these conditions alone. Unregulated competition has utterly failed to correct the abuses of the food-distributing system. Reasonable regulation of the semi-public agencies of distribution and sale by local authorities and by the state and federal governments, and organization among the farmers to improve the methods of handling, packing, distributing, and selling their products will help solve these difficulties and will benefit every one who is honestly engaged in the distribution and sale of the nation's food supplies. In order to bring about a better condition in the handling of food supplies and to reduce the cost of living, it is recommended by the Committee on Markets, Prices, and Costs of the New York State Food Investigating Commission[1] —

"That the Charters of the various cities of the State be amended so as to provide for Departments of Markets charged with the economic and sanitary supervision of food supplies used in the municipalities.

"That the primary or wholesale prices should be fixed by systematic auction sales in lots suitable for purchase by retailers, conducted under the auspices of the City or of a public organization, not for profit, in which all parties interested should have a voice, constituting, on primary prices, a producers' and consumers' market."

THE HANDLING OF THE FRUIT CROP BY COÖPERATIVE ASSOCIATIONS

The fruit-growers of the United States need to organize coöperatively to bring about a better handling, grading, and packing of their products, and to increase the efficiency in their distribution and sale. There is an enormous loss in the annual value of the fruit crop as a result of bad physical handling in preparing it for market. It is probably not overstating it to say that there is an average loss of not less than twenty per cent from this cause in picking, hauling, grading, and packing and preparing the fruit for shipment. The bruising of the fruit detracts from its appearance, and where the skin is punctured it makes it susceptible to decays that cannot enter a healthy, unbroken skin. This enormous annual economic loss can be prevented by following a few simple conservation methods.

---

[1] Report, August 1, 1912.

Bad Handling and the Fruit-Rots

The common soft-rot of apples, peaches, small fruits, and citrus fruits is usually caused by molds that gain entrance through abrasions in the skin or when the fruit is physiologically weakened. An unbroken skin is resistant to these fungi, but when the skin is broken the decay develops rapidly if there are present moisture and heat enough to germinate the spores of the fungi and start them into growth. Few have any idea of the amount of fruit that is lost by improper handling. It is not uncommon to find twenty per cent of the apples in a consignment with punctures through the skin. In cherry picking, the flesh around the stem is frequently broken. With small fruits careless pickers often injure one-half of the berries. Twenty-five per cent of the peaches are frequently injured. In citrus fruits the abrasions may vary from five to seventy-five per cent caused by the clippers in cutting the oranges or lemons from the tree, by punctures from stems that have been cut too long, by gravel in the picking boxes, or twigs in the sacks, by the finger nails of the pickers, and by various factors in the packing-house. The mechanical injuries often result from ignorance, carelessness, or improper supervision of the labor. They are generally found in fruit handled by labor that is paid by the bushel, sack, or package — a system that places a premium on the quantity rather than the quality of the work performed. Among different pickers working side by side, one laborer may pick the fruit perfectly, while another injures seventy-five per cent; and comparing the fruit of ten individual growers, the amount of injury in the product of each, taken as a whole, may show an equally wide variation.

The careful handling of fruit is an art that is not acquired by the average fruit-grower, it is not commonly acquired by the laborer, and it is seldom developed unless the business of the growers is organized so as to insure the careful handling of the product as a whole. The physical injuries that result from handling are the most serious where each grower in an association picks and handles his own fruit. It is least where they are organized so that careful handling methods can be universally applied as a part of the fruit-handling system. Coöperation is the only method by which the fruit of all the growers of a community can be handled with similar care. Through the coöperative organization a system of inspection can be inaugurated, an educational campaign vigorously promoted, and, when practical, the orchards of the members can be harvested and the fruit graded and packed by trained gangs of laborers working under the control of the association.

Coöperation in the Harvesting of Fruit

In the citrus fruit industry in California a large proportion of the oranges and lemons grown by 12,000 to 15,000 farmers are picked, graded, and packed by labor working under the control of coöperative associations. The physical handling of the fruit is thereby standardized. Formerly the individual member of the association picked his own fruit and delivered it to the packing-house. It was pooled with the fruit of the other members. One grower would deliver his fruit to the packing-house with an average of three per cent physically injured; another with equally good fruit, but handling it carelessly, would injure fifty per cent of his oranges in picking. The abrasions in the skin being too small to be seen readily, the fruit of similar grade of both growers was mixed and sold in a pool. A car containing part of the first member's fruit would arrive in Boston in sound condition, while a car containing a part of the fruit of the latter might develop twenty per cent decay in transit. The first grower was the loser and the second was the gainer under this condition. Before the nature of the citrus fruit decays was understood, damage claims were usually filed against the railroads to cover the loss from decay, the shipper thinking that the loss was due to the improper handling of the refrigerator cars while in transit. The merchant who bought the latter member's fruit was dissatisfied, and so was the consumer, who may have received one or two decayed oranges in the dozen for which he paid fifty cents. Decayed fruit is demoralizing to the fruit industry. The losses from decay formerly cost the citrus growers of California from three-quarters of a million to a million and a half dollars annually, most of which was preventable. In 1911 the claims for decay and all other kinds of damage by the railroads was less than one per cent of the F.O.B. value on cars handled by one organization through which was distributed more than sixty per cent of the entire citrus crop.

The Remedy for Decay in Citrus Fruits

The causes of decay in the citrus fruits of California were determined through the work of the United States Department of Agriculture. The department showed[1] that the underlying cause of decay was carelessness in picking and handling the fruit and that the system of fruit handling as practiced in California and in other states put a premium on careless work. It was suggested by the department that the picking of the fruit be done by the associations rather than by the individual members in order that the physical handling might be standardized. Gangs of labor were then organized by the associations, and each gang was placed in charge of a capable foreman. The pickers were paid by the day rather than by the box, and the fruit of fifty members was thereby handled with the same degree of care that the careful individual grower bestowed on the harvesting of his crop. Commercially speaking, the decay in citrus fruit handled in this manner was practically eliminated, an enormous saving was effected to the industry, the relations between the shippers and transportation companies were improved, the wholesale dealers paid higher prices for the fruit, the retailers could charge the consumer a lower price because all the fruit was sound, and a better feeling in general pervaded every branch of the industry. But this is not all. The better handling of the fruit by the coöperative organizations quickened the coöperative spirit among the fruit-growers. The trees of the members are now often fumigated by the associations, or by coöperative fumigation associations, and spraying is often done in the same way. Protection of the orchards against frost is sometimes handled in the same way. In some cases pruning is done by the associations, and every operation that the associations perform is done better than it ever was before. In an unorganized agricultural industry it is impossible to bring about a reform of this kind. The average individual grower cannot handle such a question alone. If properly managed, the association raises the economic efficiency of a community because it can apply methods to the operations of all the growers that can only be applied by the exceptional grower who works by himself.

---

[1] The Decay in Oranges while in Transit from California, Bulletin 123, Bureau of Plant Industry, G. Harold Powell and associates.

The harvesting of fruit by an association is not practical in all kinds of fruit-growing. In the quick-ripening summer fruits, the method is too cumbersome. In apple-growing it may be applied if the association can find competent foremen to handle the labor. If the association cannot harvest the fruit, it can adopt rules of picking to be followed by each member, and it can enforce these rules through inspectors whose duty it is to inspect the picking and handling operations on each farm and by a rigid inspection of the fruit when it is delivered by the member to the association at the railroad station, warehouse, or other assembling point. These inspectors are an invaluable educational force in a community of fruit-growers just as the Danish dairy inspectors who test the cows of each member of an association and who give advice in other matters have been among the most potent factors in the upbuilding of the dairy industry in Denmark. They can assist the grower in his cultural operations, advise him in regard to the fertilizers to be used, and help him in a number of other ways.

To reach the highest efficiency, an association must be an educational power among its members. Unless it coöperates with the grower in making the rules effective, it cannot establish rules of harvesting, grading, and packing and then eliminate the fruit of every member that does not square with the rules. Coöperation means mutual helpfulness. It means the adoption of a high standard of business procedure and then an organized effort to teach the individual member how to reach this standard in his personal operations. Arbitrary dealing with the members of an association who violate the rules may be necessary to maintain the high standard of the association, but arbitrary action that is not accompanied by an effort to help the erring member, breaks the coöperative spirit, and in the end is likely to disrupt the organization.

Coöperation in the Grading and Packing of Fruit

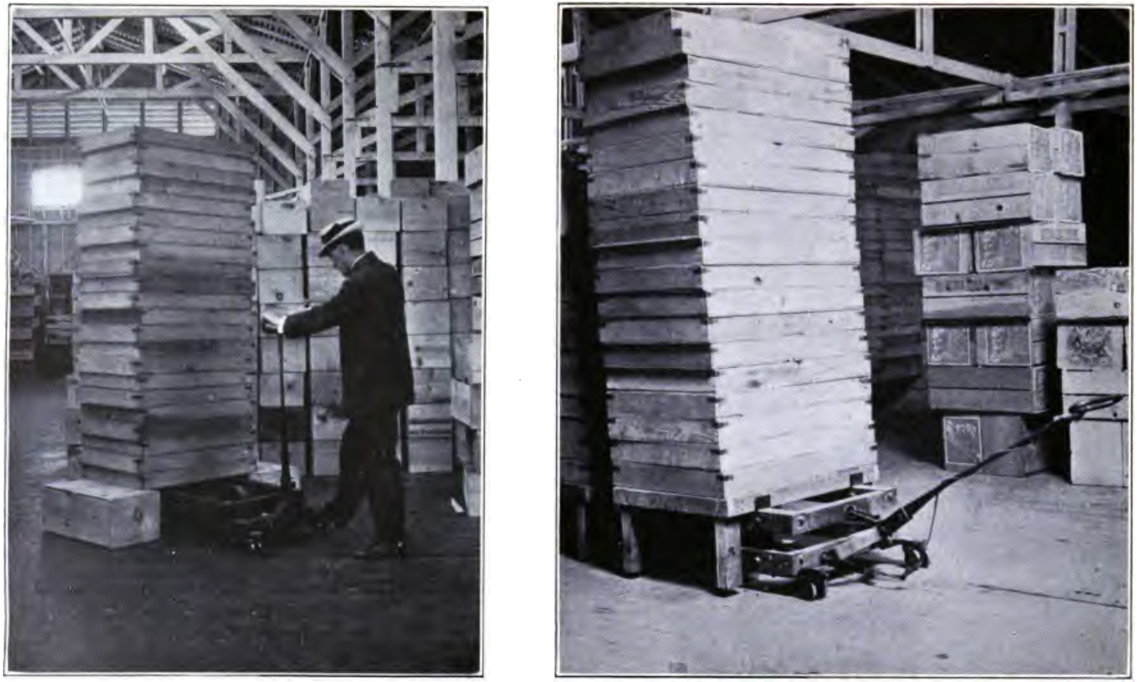
It is not possible to grade and pack the fruit of a community uniformly when the individual grower performs these operations. Fruit grading and packing are arts that require a degree of skill that is seldom possessed by the individual fruit-grower. No community can reach the highest efficiency as a fruit-growing section where its reputation depends on the fruit packed and graded by the individual growers, unless the growers are organized and the grading and packing are uniformly done in accordance with established rules. The average fruit-grower will not, and cannot, grade and pack fruit either uniformly or artistically. Many do not pack it honestly. The frauds that are deliberately perpetrated by many of the farmers in grading and preparing their products for sale are fully as reprehensible as the practices that have already been ascribed to the dishonest middlemen. In fact, in an unorganized fruit district it is the exception rather than the rule to find a package of fruit that is packed and graded uniformly by the average fruit-grower. Wormy apples are mixed with the sound fruit, the sizes are mixed, the color is not uniform, and small fruit is found in the middle or bottom of the package. A community, therefore, in which the fruit is graded, packed, and sold by the individual fruit-grower seldom acquires a high reputation as a fruit-growing section. On the other hand, a region that contains a similar class of growers and produces similar grades of fruit may become a better fruit-growing region, it may increase the proportion of high-grade fruit produced and increase the net returns to the individual grower by handling the grading, packing, and marketing problems under a comprehensive business system through a coöperative association.

Methods of Insuring Uniformity in Grading and Packing

There are several methods by which uniformity in the grading and packing of fruit can be accomplished in a coöperative association. The association should first define the grades of the different kinds of fruit. It should then provide rules to cover the grading and packing and provide the machinery by which these rules can be enforced. Where the fruit is not packed in central packing-houses, it is sometimes picked and packed by the grower according to the rules of the association, and inspected by an employee of the association before it is accepted for shipment. This system works fairly well with fruits that have to be handled quickly like the small fruits and the deciduous summer fruits. The association provides an inspector at the shipping station, warehouse, or other point, and he makes a general inspection of the packages when the fruit is delivered by the grower, passing the packages that conform to the established grades, and throwing the other packages into lower grades or returning them to the grower for regrading and packing. This is the least efficient system that can be adopted, because it does not help the grower in the original grading and packing of the fruit.

A better plan is to have the grower pick the fruit when directed to do so by the association. It is then graded and packed in the orchard or packing-house on the farm by trained men in the employ of the association, working under the direction of an association foreman. Under this plan the fruit of the members of an association can be graded and packed with comparative uniformity. A

PLATE XII.—Trucks for Use in Citrus Fruit Packing-houses. Chapters IV, VIII.



Trucks Used in Movement of a Stack of Lemon Trays.

modification of this plan, and one that is much less efficient, is to have the fruit graded and packed by the grower under the rules of the association, but with all of the operations under the direction of association inspectors, who visit each farm once or twice daily. Under either system the packages need to be inspected before they are accepted by the association, the inspection taking place at the shipping station, warehouse, or other centralizing point. Every package rejected should be regraded and repacked at the expense of the grower, or the fruit should be placed in a lower grade. This system is in operation in several of the most successful apple-growers' associations in the United States.

The Hood River Apple-Growers' Union

A pioneer in the handling of apples on the association plan is the Hood River Apple-Growers' Union of Hood River, Oregon. This association has made Hood River famous the world over for the excellence of the grading and packing of the apples grown in the Hood River Valley. In order to show the details of its methods, the leading features of the constitution and by-laws, the grading rules, and the regulations for 1911 are set forth. In this association the fruit is picked by the grower, packed on his place by labor under the control of the union, and inspected at the union warehouse before it is accepted for sale.

CONSTITUTION AND BY-LAWS OF THE HOOD RIVER APPLE-GROWERS' UNION

ARTICLE I

The name, place of business, capital stock, and purposes of this corporation are set forth in the Articles of Incorporation, which are referred to as part of these By-laws.

ARTICLE II

The membership of this corporation shall be confined to actual growers of fruit of Hood River Valley and vicinity.

* * * * * * * *

ARTICLE IV

The directors shall have the power to levy and collect assessments on the capital stock not to exceed fifty per centum of the stock subscribed at any one time, and not oftener than every sixty days; the same to become delinquent in thirty days from date of notice of such assessment in the local newspaper. The directors shall sell shares of stock to actual fruit-growers only.

ARTICLE V

The directors shall employ such agents or other employees as are necessary to do the business of the corporation, and shall fix their remuneration; provided that the Board of Directors shall receive no salary for acting as directors. They shall have daily account sales rendered to the members of the Union each day, as received by them or their agent, giving a statement by whom sold, gross sales, commission, freight or express; and amount due members of the Union; also giving condition of fruit, if there be any complaint.

ARTICLE VI

The directors may refuse to receive for shipment, under the brand of the Union, any package of fruit not considered prime from any cause. They shall refuse to receive for shipment fruit from any person not holding stock.

ARTICLE VII

This organization through its Board of Directors shall have the exclusive and unqualified power to market all apples grown by any of its members. A contract between each member and the Board will be required.

* * * * * * * *

ARTICLE XIII

No Union label shall be placed on a box of fruit except by the Manager of the warehouse just before shipping.

ARTICLE XIV

Each packer will be held responsible for his own work by a system of fines. No fruit will be received unless put up by a packer employed by the Union.

ARTICLE XV

The Union will have no packing-house foreman, except those employed by the Union.

The following Grading Rules will generally cover the several grades (Hood River): —

Extra Fancy Grade. — This grade consists of normal-shaped apples only. The apples must be free from worm holes, stings, scale, fungus, scab, rust, water core, sun scald, dry rot, or any other disease, and free from all insect pests, decay, or injuries.

They must be free from bruises and limb rubs, and the skin around the stem must not be broken. All apples must be clean, fully matured, not deformed, and must have natural color. All red apples must be of good color. Special instructions will be mailed covering the percentage of color required for all red apples aside from the Spitzenbergs.

Fancy Grade. — This grade consists of apples a little below Extra Fancy, and includes such apples as are not perfect. These must be good apples, not culls. No apples with worm holes or broken skin will be accepted. Limb rubs must not be larger than a ten-cent piece. Only two stings will be allowed, and no sting is permitted where the skin of the apple is broken. No apples will be accepted if affected with San José scale, dry rot, or which show an open or black bruise. Apples showing fungus will not be permitted where the spot is larger than a ten-cent piece. All red varieties must show some red; that is, an entirely green apple of a red variety cannot go in this grade.

C Grade. — The C-grade apples shall consist of merchantable apples not included in the above grades, and may include misshapen apples, but no apples containing open worm holes, scale, or spots showing decay will be permitted. No color line whatever will be drawn on this grade.

HOOD RIVER RULES FOR PACKERS AND GROWERS

The following rules and regulations cover the operations of the packers and growers:—

1. Each packer, before beginning work, must have his name registered at the office of the Union and receive a rubber stamp. He must stamp each box of packed apples at the lower left-hand corner with his official stamp.
2. Every packer must put up a first-class pack.
3. When a box is packed the packer shall stamp with a rubber stamp upon the end of the box, in the center near the top, the exact number of apples the box contains.
4. Each box of apples must be packed with about a three-quarter inch swell in middle of top and bottom, but no box should be packed so high that it will be necessary to cleat the

box before nailing on the lid. A swell on the box, however, does not necessarily mean a tight pack; the apples must be tight from side to side and from end to end. The Union wants a tight pack, but not so compact as to bruise the apples.

5. Packers will be furnished meals by the growers, without cost, or allowed seventy-five cents per day by the grower for board, but must make necessary arrangements for bedding. The grower will furnish bed and mattress.

6. Packers are required to pack apples only properly wiped and sorted. If in your opinion the fruit should seem to be running poor grade for the pack you are putting up, notify the Field Inspector or the office at once. Remember you are held mutually responsible with the grower for the quality of your pack.

7. Each packer must set off his box when packed. Do not set a box of packed apples on top of another box of packed apples which has no cover. This will bruise those in the under box. Be very careful about this.

8. The packers are all under the supervision of the Field Inspector, who may dismiss any packer for cause.

9. All packers must refrain from smoking on the premises of any grower against his wishes. Failure to do so will result in dismissal.

Special. — The Union wants a tight pack of good apples. Don't jam the apples in and bruise them, but be sure to fill the boxes solid full in all directions, up and down, sideways and endways. Don't pack slack; pack full and compact.

Sizes. — Four-tier apples include nothing smaller than one hundred and twenty-eight size: one hundred and forty-four size is special; four and one-half tier includes one hundred and fifty to one hundred and seventy-five size; five-tier includes one hundred and eighty-five to two hundred and twenty-five size.

Packers will be paid five cents per box for four-tier and larger, six cents per box for four and one-half tier and smaller, and also allowed five cents per box for sorting off the packing table the apples not belonging to the grade which they are packing. Ten loose-sorted boxes will be counted as six packed.

Packers will not receive payment for their services until the apples packed by them shall have passed inspection at the receiving warehouse.

When the apples upon the packing table are not properly graded, the packer shall immediately notify the Field Inspector, and the Field Inspector shall examine the same as soon as possible and require the grower to resort the apples for the packer, or shall pay the packer for sorting them, and if the same is not done by the grower, the Field Inspector shall withdraw the packer and place him at some other orchard.

Field Inspectors must cover their respective territories, and advise and consult with the apple-growers as often as possible, giving them instructions for the correct grading and sorting of their apples.

Packers must not permit the growers to influence them to put inferior-grade apples into the pack, but should always bear in mind that a single bad apple may be the cause of having their pack held up by the Inspector and cause both themselves and the growers more or less loss and trouble.

The Central Packing-House

Another plan, and the most efficient of all, is to grade and pack the fruit at a central packing-house owned and controlled by the association. The growers pick the fruit, haul it to the packing-house, and there it is graded and packed by the association; or the fruit may be picked by labor controlled by the association, then hauled to the central packing-house by the grower, and there graded and packed. Under this plan the picking, grading, and packing of the fruit of a community is standardized. The nucleus of the association is the packing-house, the manager of the association is the packing-house manager, and the business operations of the association are transacted at the packing-house. The association may build a cold-storage plant as an adjunct to the distributing system, and the packing-house may be equipped with box-making and labeling machinery, and with various appliances which the individual grower cannot afford, but which are essential in the efficient and economical handling of a large fruit business.

In the small-fruit industry the central packing-house is hardly practical. It is often operated successfully in the deciduous fruit business and in the grape industry. It has been developed most extensively in the citrus-fruit business in California and is being developed in the association method of orange handling in Florida. There are more than two hundred of these association packing-houses in the citrus industry in California. The packing-house is erected by the association alongside of the railroad. It is equipped with all the necessary appliances for fruit-handling, the house and equipment costing from ten to twenty thousand dollars or more. The manager of the packing-house is usually the general manager of the association, and he receives a salary varying from fifteen hundred to four thousand dollars a year.

The Pooling of Fruit

Two general methods may be adopted in handling the fruit of the individual members of an association. In one, the product of the individual is kept separate, and the returns to the grower depend on the sale of his own fruit. In the other, fruit of similar grade belonging to the different members is pooled and sold under the brands of the association as a common commodity. The pool is an arrangement by which the fruit of similar grade of all the growers is united and sold together, and at the end of a pool, the grower receives his *pro rata* of the proceeds based on the number of pounds or packages of each grade that he has contributed.

In the peach business and in small-fruit shipping the growers may adopt a daily or a weekly or a seasonal pooling system; in the citrus business a pool may extend over ten to thirty days or even through an entire season; and in the apple business the fruit of an entire season may be handled through a single pool, though a separate pool may be made for each of the leading varieties, for the different grades, and sometimes for the different sizes in each grade. In the orange and lemon growers' associations the different grades are pooled separately, but the sizes in each grade are generally pooled together. In theory each grower has the right to contribute to each pool his *pro rata* of the fruit of the association as a whole. The manager of the association usually apportions to each grower his quota of the fruit to be shipped in a pool in accordance with his acreage. The pooling system simplifies the business methods of an association and is growing in favor as a practical working plan.

There are a number of factors that are likely to contribute to the success or failure of the pooling system. To be successful, the handling, grading, and packing of the fruit must be under the direction or control of the association in order to insure uniformity. It is not often successful when these matters are in the hands of the grower. It depends further on having a large proportion of the fruit of an association of similar character, otherwise a member whose fruit grades largely into a low class becomes dissatisfied when he learns that his neighbor's fruit grades higher. It is characteristic in the fruit industry that each grower thinks he produces the best fruit in his community, and where it happens that he is paid for a larger proportion of the lower grades than his neighbor, he may either quit the association, or he may adopt better cultural methods in order to improve the quality of his fruit. As a matter of policy the books of an association should be open to every member so that he may see whether he is producing as large a proportion of high-grade fruit as the other growers in the community. This knowledge leads to a friendly rivalry among the members in producing the largest proportion of the higher grades.

There is considerable variation in the average quality of different lots of fruit in the same grade, even under the most rigid system of grading. There is a minimum standard in each grade below which the fruit may not fall, but there is a marked variation in the fineness of texture or of finish, in the color and general style of different lots of fruit that may fall within a grade as established by the association. These differences in texture and general style are sometimes due to the soil or to other local conditions, the fruit of the same variety on other soils or in other locations in the same section showing characteristic qualities. On the other hand, the grade of fruit grown under similar conditions of soil and location depends largely on the skill of the individual fruit-grower. The association can therefore utilize the differences in the grades of the fruit of the members as a powerful educational factor in stimulating better tillage, better pruning and thinning, and a better cultural system in a community as a whole.

There is another side also to the pooling system. It may discourage the skillful grower from producing fruit of the highest average grade. If a member is an unusually skillful grower, he will not get the full advantage of his extra-fine fruit in a pool, because the practical effect of the pool is to lower the average price of the finest and to raise the price of the fruit that can just enter a grade. An association ought, therefore, to be composed of growers who are located on similar soils and in other similar conditions and who possess somewhat similar cultural skill. In some of the northwestern apple-growers' associations the fruit of a large area is pooled. The Spitzenbergs that grade fancy under the rules of the associations may vary considerably in different localities in the same section. The higher orchards often yield better apples than the lowland orchards. Some of the unusually good growers may produce a crop of apples in which the fancy grade is above the average of the fancy grade of the pool by better thinning, better spraying, and better average cultural care. These growers are likely to become dissatisfied with the association and may withdraw to protect their business interests. Small associations composed of growers similarly located and possessing similar cultural skill avoid these difficulties. A community should, therefore, form several associations, each grading and packing its fruit under the brands of the association. These associations may then federate into a central marketing agency which will market the fruit of each association as a unit or furnish the facilities for marketing, thereby preserving the advantages which soil, location, and cultural skill give to a group of fruit-growers who are similarly located.

The opponents of the coöperative plan of fruit-handling understand these difficulties and utilize them to create dissension among the members of an organization. They are practical difficulties that should be recognized in the formation of associations. Unless these fundamental conditions are carefully guarded, the pooling system may lower the average grade of the fruit of a community, because the grower, realizing that the identity of his fruit is lost in a pool, lets down on the fundamental cultural operations that produce the highest grades of fruit, and trusts to the better fruit of his more skillful neighbors to raise the average net return for the grades in which his fruit is pooled.

Coöperative Cold-Storage Plants

A coöperative association may erect a cold-storage plant at the central packing-house, or may build it independently as an adjunct to its fruit-handling and marketing operations. This plant may be used to pre-cool the quick-ripening fruits before shipment. It may be used as a centralizing point in which to accumulate large quantities of fruit in order that it may be marketed to better advantage, to equalize the distribution of the product over a longer period of time, or to hold the fruit until the surplus is exhausted, with a view to securing higher prices. Such plants have already been erected by associations of orange-growers in California and by apple-growers in the Northwest and in the Eastern states. Following the investigations by the United States Department of Agriculture, cold-storage plants have been built in California in connection with association packing-houses to hold from twenty-four to fifty carloads of oranges. The fruit is cooled to thirty-five degrees Fahrenheit before shipment, and is then forwarded to any point in the United States with the initial icing of the cars only. The ice used in filling the bunkers of the car is manufactured at the plant or is supplied to the shipper by a local ice company. It has been determined by the Interstate Commerce Commission that it costs the shipper from $30 to $35 to pre-cool and pre-ice a car of oranges, including interest on the investment and depreciation on the plant. In addition to this the railroad charges the shipper $7.50 for the wear and tear on the ice bunkers when a car is iced by the shipper but is not re-iced in transit, making a total average cost to the shipper of $40 per car. When the fruit is shipped under standard refrigeration, the railroads furnishing all of the ice, the refrigeration charge is $60 to the Missouri River, $62.50 to Chicago and similar points, $72.50 to Buffalo and Pittsburg, $75 to New York, and $77.50 to Boston. The primary object of pre-cooling in the citrus-fruit industry is to cheapen the cost of transportation. This the growers' system of pre-cooling and pre-icing does when compared with the regular refrigeration costs to the extent of $20 to $37.50 per car on fruit shipped to the Missouri River points and to Boston. It is not required to prevent the fruit from decaying while in transit, because an orange or lemon that is properly handled is immune to the blue mold decay. The cold-storage plants at the orange packing-houses have been found useful in extending the shipments at the last of the season when prices are sometimes unusually high and in handling the picking and packing operations more uniformly and in the loading of cars of desirable grades and sizes from the larger accumulation of packed fruit in the storage rooms.

There is some question, however, whether storage plants should be erected by associations primarily to cheapen the cost of transportation. The legal right of a shipper to pre-ice a car is questioned by the Western railroads, and the matter is now before the courts for determination. The Interstate Commerce Commission considers the pre-icing of the car a part of the preparation of the fruit for shipment and has recognized the right of the shippers to pre-ice a car by fixing a rate which the railroads may charge when the shipper pre-cools and pre-ices a car and forwards it under instructions not to be re-iced in transit. The question has been carried by the railroads, who consider pre-icing as a part of the service of transportation, to the United States Commerce Court, and until it is decided by the courts the status of the railroads and shippers will probably not be finally determined.

A cold-storage plant is most useful in the apple industry. An association that can store a part of the crop is protected against the necessity of selling the fruit at the prices that prevail during the harvesting season. The prices at that time may be fixed arbitrarily through an agreement by the buyers. The space in the large commercial storage plants may be in the hands of the buyers, and the grower is obliged to accept whatever price is offered. A cold-storage plant makes it possible for the grower to secure the highest price obtainable for the fruit by protecting him against a combination of conditions through which the competition of buyers is eliminated and which places him at the mercy of a predatory combination. The same plant may be used for cooling peaches, strawberries, pears, or other quick-ripening fruits before shipments, and for the commercial storage of other products that may be stored between the apple storage seasons. The plant may also be used for the manufacture of ice for local use and for the initial icing of the cars.

COÖPERATION IN THE DISTRIBUTION AND SALE OF FRUIT

The coöperative fruit-growers' organizations of the United States usually sell their product to the wholesale trade. They do not sell to the retail dealers except at auction points and almost never attempt to sell the fruit to the consumer. The coöperative association makes it possible to assemble and offer for sale large quantities of fruit that is uniformly graded and packed. The association is in a position to transact business in a large way. It can perfect an economical and efficient business system and can protect the producer against the abuses of the haphazard methods that are common in the distribution and sale of farm crops. It is in a position to give stability to the distribution of a crop on account of the volume it handles, — a condition that is seldom realized in the business of the individual farmer.

The large volume of business which an association can transact in contrast with the small quantity that an individual has to handle is a business asset. It replaces a chaotic business system by a method that is capable of being systematized. An association can develop brands that will be bought and sold confidently by the trade. The association with a large quantity of high-grade fruit is not dependent on any one method of marketing. It can adopt that which is best fitted to its local conditions and to the kind of fruit that it handles. The best buyers are attracted by large quantities of uniformly graded and packed fruit. The best results follow the consignment of regular quantities of uniformly graded and packed fruit to a commission merchant, as the latter, knowing something of the volume of business to be transacted, can develop his trade as no merchant can who handles small quantities for individual growers. The association can develop a local auction system or sell through an auction company in the market, or if necessary can establish auctions of its own in the large cities. It can sell for cash to jobbers at point of shipment or on delivery. It can build a cold-storage plant as an adjunct to its distributing system. It can advertise and stimulate consumption in other ways, develop a sales department, legal, traffic, auditor's, and other necessary departments, and it can adopt other methods and precautions that are necessary to insure the management and development of its business along the most effective business lines.

The Associated Methods of Selling Fruit

Whether an association should sell its fruit for cash at the point of production, or on delivery at destination, consign it to distant commission merchants or to auction companies, or consign it to its own agents to be sold on arrival, depends upon the character of the fruit, the volume of the business, the season of the year, the section of the country into which the fruit is to be shipped, and the condition of the fruit trade.

A Small Association. — A small association, like the individual fruit-grower, is handicapped in disposing of its product. As a general principle, it will do best by selling to local buyers, to jobbers, or to distant jobbers for cash at the shipping point, leaving the risks of transportation and of marketing to the established marketing agencies. Under this method a carload of fruit usually brings a lower net price than a carload of similar sound fruit would bring at destination because of the risk of transportation and final sale. The small association is not in a position to develop a comprehensive marketing system. When a carload is shipped from a packing-house to be sold at some future time, the small shipper is at the mercy of the trade. His product is subject to discount from decay, from over-ripeness, from alleged bad packing, and from every other factor that gives the unfair buyer an excuse to reduce the price, especially on a declining market. He is equally at the mercy of the dishonest commission merchant if the fruit is shipped on consignment. Selling for cash at the point of production gives the grower his money quickly, and, if there is actual competition among buyers, this method on the whole is likely to be more satisfactory than any other that the small association can adopt.

A Large Volume of Business. — The association that has a large quantity of fruit need not be restricted to a selling system at the point of production. It can adopt this method if it is found to be most satisfactory, but it is in a position to develop a marketing system whereby its product can be sold in distant markets as well and the demand for its fruit developed at the same time. A large association or federation of associations can select brokerage agents to represent it in the principal markets, it can place salaried agents in these markets to sell the fruit to the wholesale trade, and it can put the fruit in storage from which it can be sold on order, consignment, or at auction. Through orders obtained by the agents in the distant markets, the association or the members of a federation can sell carloads of established brands for cash F.O.B. at the point of production or on delivery, or it can adopt any other method which produces a more satisfactory result.

Perishable Fruit. — As a general rule an association which handles perishable fruit, like the small fruits, peaches, plums, and other summer fruits, will do best to sell at the point of production under any of the methods previously described, unless the association is large enough to develop a comprehensive marketing system and can consign the cars to its own agents to be sold at private sale or at auction on arrival at destination. The small association which handles perishable fruit must sell at the shipping point, consign to a commission merchant, or sell through a brokerage agent in the market. The perishable fruits must be sold quickly, and, as a general rule, the average producer will fare best when he depends upon the buyers who assemble at the shipping points to sell and bring his product into quick consumption. On the other hand, a locality that produces a small quantity of fruit will not attract buyers, and the association then has to consign to commission merchants, or develop other methods of sale.

The system of selling at the point of production becomes inadequate when a section produces a large quantity of perishable fruit. In California, for example, the F.O.B. method of selling either to local buyers, or on order from distant firms, was satisfactory when the deciduous fruit business was small. But as the fruit business increased, the buyers were unable to develop markets satisfactory to the shippers, and the associations of shippers were obliged to do their own distributing and to depend on the auction markets in the larger cities as a means of getting a larger quantity of fruit before the retail trade. The jobbing and commission firms who handled the California fruit were unable to develop a trade that would give the California producer a profit on his business. Now fifty per cent of the deciduous fruit of California is sold at public auction in the large cities.

Fruit with Long-keeping Qualities. — The distribution and sale of fruit that can be kept a long time without deterioration from decay or over-ripeness can be handled by a coöperative association more easily than the highly perishable kinds. Apples and citrus fruits can be shipped long distances and may be stored several weeks or months without excessive loss. They are more like the staple farm crops and can be handled under a system that would not be practical with fruits of a shorter season, or of a highly perishable nature. With these products a comprehensive marketing system can be developed by the growers themselves which will insure uniformity in the distribution of the product throughout the country and over the season. Whether they should sell the fruit at the point of production or in the centers of consumption depends on local conditions, the competition or absence of competition among buyers, the section in which the fruit is to be shipped and the volume of business to be handled. With these fruits the growers can afford to take the risks of distribution and of final sale. They are less dependent on the local buyers, and they can sell at the point of production, to distant buyers on an F.O.B. cash basis, or subject to inspection on arrival, through auction companies or through their own agents.

THE CITRUS FRUITS OF CALIFORNIA

The citrus fruits of California can be handled differently from any other American fruit. They are staple products, and the distribution and marketing can be reduced to a systematic basis. The growers have been obliged to develop the most comprehensive, scientific system of crop distribution that is applied to a farm product anywhere in the world in order to safeguard their property interests by insuring a proper distribution and marketing of their crop. They cannot risk their property by depending on local and distant jobbers and fruit buyers to distribute their fruit, pay them a fair price for their crops, and at the same time create a demand that will take care of the constantly increasing product. They have been obliged to eliminate speculation from the distribution of their crop and to distribute it evenly on a merchandizing basis. As an outcome of an experience of twenty years, sixty-five per cent of the growers, through one organization, the California Fruit-growers' Exchange, have placed their own agents in the leading cities of the United States and Canada, and through these agents the growers distribute the vast crop to the wholesale trade, they increase consumption through advertising and in other ways, and through their grasp of the daily market conditions throughout the country they distribute and sell the crop under advantages that no other system can approach. Occasionally an effort is made by local brokers, or auction companies, or by other local interests who are interested in making money by handling the growers' product to have the coöperative organizations change the methods which have been developed as a result of years of experience and return to the former system of selling the fruit to speculative buyers in California, either direct or through local auction sales, leaving the distribution of the crop and the extension of trade entirely in the hands of the speculators. These efforts are made by those who aim to exploit the citrus-fruit growers rather than to develop the industry. They aim to disrupt the present marketing system so that they can absorb the growers' profit through dividends on the stock of the auction company rather than to make a profit for the grower. The principle of depending on a large number of speculative buyers who purchase the fruit in California, to give the producer a fair price for the fruit and at the same time develop a comprehensive system of distribution that will take care of the increasing crop, is unsound from the economic point of view. It was tried in the early days of the industry and failed. The present system insures uniformity in the distribution of their crops through the United States and Canada and uniformity in the shipments throughout the year. It gives stability to the business of the fruit jobber in every market of the United States,

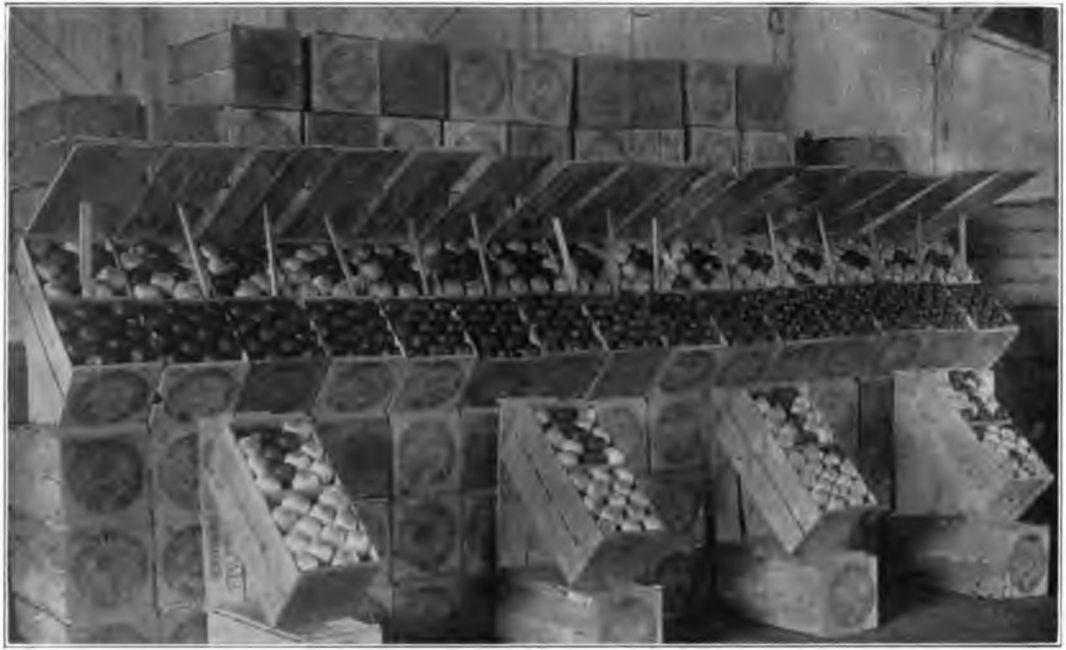


PLATE XIII.—Oranges Exposed for Sale at Auction. New York. Chapter VII.

making it a merchandizing rather than an uncertain speculative business. The present system is the leading factor that insures the stability of the citrus industry and protects the two hundred million dollars that are invested in the groves and packing-houses.

Selling the California Citrus-fruit Crop

The California orange and lemon crop now equals nearly fifty thousand carloads, or twenty million boxes. There are more than twelve thousand growers engaged in the culture of the fruit. Probably three-fourths of them are organized into coöperative associations, sixty-five per cent of which are federated into the California Fruit-growers' Exchange. These associations build a packing-house in which the fruit of the members is assembled, graded, packed, and made ready for shipment. The methods under which these organizations operate will be understood by a brief description of the principles underlying the exchange system.

The California Fruit-growers' Exchange

The California Fruit-growers' Exchange is an organization which acts as a clearing house in providing the facilities through which sixty-five hundred growers distribute and market their fruit. The exchange system is built on three foundation stones: the local associations of growers, through which the fruit is prepared for market; the district exchanges into which the associations of a community are federated and which act as clearing houses for the local associations; and the central exchange, which provides agents through which the district exchanges in coöperation with the associations distribute and market the fruit for the growers. The local associations, the district exchanges, and the California Fruit-growers' Exchange are organized and managed by the growers on a non-profit coöperative basis, each of them operating at cost, and each distributing the entire net proceeds to the growers after operating expenses are deducted.

The Local Associations. — There are a hundred and fifteen local associations in the California Fruit-growers' Exchange. These associations are formed by the growers of a community, the membership including from forty to two hundred members and on the average about five hundred acres of groves. The growers usually organize as a corporation without profit under the laws of California and issue stock in proportion to the bearing acreage, to the number of boxes shipped, or in equal amount to each grower. The association usually owns a packing-house alongside a railroad where the fruit of the members is assembled, graded, pooled, packed, and prepared for shipment, these operations being done at cost prorated on the number of boxes shipped by each grower. The associations are managed by a board of directors and a manager, and are conducted exclusively for the benefit of the growers. They accumulate no profit and declare no dividends. The fruit is generally pooled each month, or sometimes a pool includes the entire season, each grower receiving his proportion of the proceeds received for each grade handled during the pool. Occasionally the association handles the fruit for each member individually. Many of the associations pick the fruit, and some of them prune and fumigate the trees for the members. The associations have brands for each grade of fruit, and when a carload is ready for shipment it is marketed in coöperation with the district exchange of which the association is a member through the agents and facilities provided by the California Fruit-growers' Exchange.

The District Exchange. — The local associations have formed seventeen district exchanges. These exchanges are corporations without profit, with nominal capital stock, each association in the exchange usually owning one share and having one member as its representative on the board of directors. There may be one or more district exchanges in a community depending on the number of local associations and the local conditions. The function of the district exchange is to act as a clearing house in marketing the fruit in coöperation with the associations through the facilities provided by the California Fruit-growers' Exchange, and to act as the medium through which most of the business relations between the exchange and the local associations are handled. It is the duty of the district exchange to order cars and to see that they are placed by the railroads at the various packing-houses, to keep a record of the cars shipped by each association with their destinations, to inform themselves through the California Fruit-growers' Exchange of all phases of the citrus-marketing business, to place the information before the associations, to receive the returns for the fruit through the central exchange, and to return the proceeds to the associations.

The Central Exchange. — The California Fruit-growers' Exchange is a non-profit corporation under the laws of California formed by the seventeen district exchanges with a capital stock of ten thousand dollars. The Exchange is managed by a general manager; it has a board of seventeen directors, one representing each district exchange. The function of the California Fruit-growers' Exchange is to furnish marketing facilities for the district exchanges and associations at a *pro rata* share of the cost. The exchange places bonded agents in the principal markets in the United States and Canada, defines the duties of the agents and exercises supervision over them. It gathers daily information through them of conditions in each market and furnishes it daily in bulletin form to the associations. The exchange makes prompt accounting of returns which are sent to the shippers through the office of the district exchange. It takes care of all litigation that arises in connection with the marketing of the fruit, handles all claims, conducts an extensive advertising campaign to increase the demand for citrus fruit, develops new markets, and performs such other functions as are set forth in the contracts between the central exchange, the district exchanges, and the associations. At the end of the year the central exchange levies an assessment against each district exchange for a *pro rata* share of the expense on a basis of the number of boxes shipped. The exchange declares no dividends, and it does not buy or sell fruit or any other commodity, and exercises no control either directly or indirectly over their sale or purchase. Its function is to provide the facilities for the distribution and marketing of the fruit for those shippers that wish to avail themselves of them. Under the exchange system every shipper reserves the right to regulate and control its own shipments; to use its own judgment as to when and in what amount it shall ship; to what markets it shall ship and the price it is willing to receive; reserving the right of free competition with all other shippers, including other members of the same organization uncontrolled by any one. The agent in the market acts directly under the order of the shipper, who determines the price at which each car shall be sold outside of the auction markets and all other matters connected with its disposition, the California Fruit-growers' Exchange acting as the medium through which orders pass from the agent to the shipper, but never selling a car or determining the price at which it shall be sold.

The exchange is a broadly democratic organization in which the growers exercise control over all matters. The membership in the exchange is voluntary; a grower may withdraw from an association at the end of the year, an association may withdraw from a district exchange, and a district exchange may withdraw from the central exchange, these relations being set forth in the various contracts that hold the members together. There is no attempt on the part of the central exchange to regulate shipments or to influence prices. In this connection its function ends in keeping the associations informed daily regarding the shipments from California, the general movement and market conditions in the different marketing points, and in furnishing such other information as will allow the growers through their associations and district exchanges to decide these questions for themselves. One-third of the entire shipment is sold in the auction markets, and the remainder at other points through unrestricted competition. There is no uniformity in price in the different brands, because the fruit in each section, on account of soil and other local differences, has an individuality of its own, and every brand sells on its own merits.

There are in addition to the California Fruit-growers' Exchange about forty independent coöperative associations and individual grower-shippers, which, with the exchange, handle eighty-five per cent of the citrus-fruit crop. The independent coöperative associations conduct their operations along the same general lines as outlined above; except that they market through brokers in the market, all of the business transactions being handled direct or by an agent who represents them in all of their business transactions. In addition to these associations and independent grower-shippers, a small proportion of the fruit is handled by speculative buyers or is shipped through agents to Eastern firms on consignment.

Fixing a Price

There is a tendency in farmers' coöperative associations to fix the price at which the entire crop shall be sold, or the price for a period in advance, or for the different grades of produce. They are induced sometimes to regulate the output, divide the territory, and to follow other practices that restrict competition and regulate prices. These practices or any others that tend to regulate the price or to restrain or regulate trade conditions are likely to bring an association in conflict with the state and federal statutes that have been enacted to prevent combinations of any kind that act unreasonably in the regulation of prices or in restraint of trade. Such practices when followed by manufacturers have been declared illegal by the courts.

Present Coöperative Methods of Citrus Distribution

As long as the country is prosperous and the present method of distribution and sale takes care of the increase in production, the producers will be satisfied to continue the methods now in operation. As the fruit business increases, and it is likely to double in volume in the next fifteen years, it may be necessary for the growers' associations to still further develop the methods of distribution so that the fruit may be placed in the consumer's hands at a cost nearer that which the producer himself receives. The system which has been adopted by the citrus-fruit growers has brought about economies in the purchase of supplies, in preparing the product for shipment, and in the cost of selling the fruit; it has secured lower freight rates, reduced the losses from bad debts; it has standardized the physical handling of the fruit, the grading and the packing, and has thereby given the consumer a better product; it creates a demand for oranges and lemons by advertising, and it distributes the product uniformly to the wholesale trade throughout the year and throughout the country. This uniformity in distribution has increased the demand for citrus fruits and has resulted in a lower retail price to the consumer and gives a larger proportion of the retail price to the producer. The coöperative method sometimes doubles the net returns to the grower without affecting the price which the consumer has to pay. There is a wide difference between the price which the producer receives from the wholesale trade and the price which the consumer pays for citrus fruits, a recent investigation by Secretary of Agriculture, Wilson,[1] showing that when the consumer buys oranges by the dozen, the producer receives only twenty per cent of the retail price, whereas he receives 59.3 per cent when the purchase is by the box. It has been shown by the Committee on Markets, Prices, and Costs of the New York State Food-investigating Commission in 1912, that the cash margin between the wholesaler's cost and the retailer's selling price of a dozen lemons is 122.2 per cent over the wholesale cost; bananas, 135.2 per cent; Baldwin apples, 116.2 per cent; and Florida oranges, 40 per cent.

Before the California citrus growers systematized these operations, the cost of handling and packing the crop was nearly double the present cost. The crop then was a speculative product and was controlled by speculative dealers rather than by the producers. There was a wider variation in the wholesale price of both oranges and lemons. Now the retail price of oranges is usually lower than the retail price of apples, and the orange has been transferred from a luxury to a staple article of diet.

THE COÖPERATIVE DISTRIBUTION AND SALE OF OTHER FARM PRODUCTS

The coöperative method of conducting the business of the farmer may be applied to other branches of agriculture not already discussed in the foregoing pages. The vegetable growers of the East and of the Southwestern states have coöperative organizations; the walnut growers, the lima-bean growers, the celery and cauliflower growers, the raisin and dried-fruit interests of California, are organized to a greater or less extent, the potato growers of Maine and of the Delaware, Maryland, and Virginia peninsula, and the growers of different kinds of fruit in the Northwest, the cantaloupe growers of Colorado, the rice growers of Louisiana, and growers of other products have associated under various forms to act for them in the distribution and sale of their products through coöperation rather than through individual effort. The coöperative method is already in operation among the live-stock shippers of Minnesota, and it is applicable universally to the distribution and sale of live-stock and of live-stock products in every part of the United States. The principles that have been discussed can be applied to the coöperative distribution of all kinds of farm crops and of manufactured products, though, of course, the details of organization and of operation will need to be varied to meet the peculiar conditions in each industry.

---

[1] Report of Secretary of Agriculture, 1910, p. 22.

CHAPTER IX

COÖPERATION IN THE PURCHASE OF SUPPLIES

One of the most important functions of a coöperative association is to purchase the supplies used on the farm and in the handling and marketing of the crops. The association may act as a merchant by buying the supplies and selling them to the members, or as a clearing house through which to secure favorable quotations from manufacturers and wholesale dealers, acting for the members in placing the orders with the dealers who supply the different kinds of materials and in collecting the money from the members for the same. It may also become a manufacturer of such supplies as box material and other kinds of finished lumber, or it may operate a plant for the mixing of fertilizers. Under either method a well-managed supply company should be able to furnish fertilizers, coal, lumber, nails, twine, spraying materials, tools, and machinery at a lower cost than the farmer pays when he buys them from the local merchant at the prevailing retail prices.

THE ORGANIZATION OF A SUPPLY COMPANY

The supply company may be formed as a department of a coöperative association already organized to distribute and sell the farm crops, as is often done in connection with coöperative creameries, grain elevators, and fruit-growers' associations, or, if the volume of business is large enough, it may be organized as a separate coöperative corporation. The supply companies are usually formed as stock corporations, though sometimes they are organized on a non-profit basis. They may be formed under the ordinary stock corporation laws and still include the essential features of a coöperative association by limiting the amount of stock to be held by a member, by requiring that shares of stock shall be non-transferable until after they are first offered for sale to the association, by adopting the "one man, one vote" method of administration, by restricting the dividends to be paid on capital stock to a nominal rate of interest, and by distributing the remaining net profits according to the amount of patronage of each member, after setting aside an amount for depreciation on the property, a fixed interest on the capital stock, and a reasonable reserve fund.

A supply company occupies a somewhat different position than a distributing association. The former has to provide capital before it can purchase the supplies for its members. In the latter the capital required is for operating expenses and for buildings and equipment, and these expenses are provided as the business progresses by retaining certain percentages from the sale of the products. It is therefore desirable to organize a supply company as a stock corporation with a capital sufficiently large to be used in conducting the business, or to be used as security in providing such capital as is needed, defining the policy of the corporation through its charter and by-laws so that it may be operated for the benefit of the members and not exclusively for the stockholders. Some of the supply companies sell materials to members who are not actually stockholders and at the end of the season distribute one-half as much of the net earnings to the members as they distribute to regular stockholders.

METHOD OF SELLING SUPPLIES TO THE MEMBERS

There are two methods of selling supplies to the members of a coöperative association. In one they are sold at the actual cost of the supplies with an estimated percentage added to cover the cost of operation, interest, reserve, and depreciation. In the other, the prevailing retail market price is charged for each article, and the profits are divided among the members at the end of the year in proportion to the trade of each after the reserve, the interest on the capital stock, and the depreciation are deducted. In some cases the profits made on supplies are the principal source of the dividends to the stockholders of a coöperative farmers' organization.

The charging of the regular retail price is generally to be preferred in the sale of supplies. It protects the local dealers against ruinous price cutting which they must do if the coöperative association sells the supplies at cost; it protects the wholesale dealers and manufacturers who are more likely to give favorable quotations when they know that their goods will not be sold at less than the prevailing retail prices; it tends to increase the membership among the non-members who learn of the dividends received by their neighbors; and the dividend at the end of the year has a peculiarly favorable psychological influence on the coöperative members which does not occur when the equivalent of the dividend is distributed over the purchases throughout the year. In fact, without the dividend at the end of the year, the member may not know whether the benefit that the association is supposed to confer is a tangible thing or not. There are certain dangers in the dividend system that need to be frankly recognized. Members of a coöperative association are likely to acquire the dividend habit and to be greatly dissatisfied when dividends are not paid. There is then a temptation on the part of the incompetent managers who are afraid of losing their positions when a dividend is not declared to purchase a lower grade of supplies and to raise the price here and there in order to create a dividend. When the dividends are fairly handled the dividend represents the actual savings to the members who deal through a coöperative association.

The system of selling supplies to the members at cost is not often practiced by coöperative associations. Many of the manufacturers and wholesale dealers refuse to quote favorable terms to associations that sell in this manner, because it eventually reduces the retail price which the local dealers charge to the level of the wholesale cost price of the association. As soon as this condition is brought about, the members of the association gain no financial benefit, and the association is likely to lose the support of its members. In the handling of fertilizers that cost forty dollars a ton at retail, but for which the retail dealer pays thirty seven and a half dollars a ton, the fertilizer manufacturers may refuse to sell at wholesale cost to a coöperative association that sells the fertilizers to its members at that price because the comparison of prices in the community will eventually force the local merchant to sell the fertilizer at actual cost.

A FRUIT-GROWERS' SUPPLY COMPANY

A better understanding of the scope of a producers' supply company may be obtained by reference to the articles of incorporation of a company in California that furnishes fruit-growers' supplies.

ARTICLES OF INCORPORATION

OF THE

____

____

WE, THE UNDERSIGNED, the majority of whom are residents of the State of California, do associate ourselves for the purpose of creating a corporation under and according to the laws of the State of California. To that end we do declare —

First: That the name of said corporation is, and shall be ____________________.

Second: That the purpose for which it is formed is to manufacture, buy, sell, and deal in supplies of every kind or nature necessary or incidental to the packing, shipping, and marketing of fruits and fruit products, and all other agricultural products;

To buy, sell, lease, and otherwise acquire and dispose of property, real, personal, or mixed, in any state or territory of the United States or in any foreign country, and to mortgage or hypothecate the same, and to execute deeds of trust, or other instruments, as security for the payment of any indebtedness or obligations issued by this company;

To purchase, lease, or otherwise acquire and dispose of timber lands, timber rights, water and water rights and mill sites in any state or territory of the United States, or in any foreign country;

To buy, sell, mill, and deal in timber and timber products;

To buy, sell, mill, and deal in paper and paper products;

To acquire, hold, operate, and dispose of land, buildings, machinery, ships, vessels, privileges, wharf franchises, and other franchises;

To erect buildings and machinery and to construct wharves;

To carry on a general wharving business and to operate mills and machinery for the manufacture of lumber, paper, paper pulp, packing-house supplies, and all other articles and materials of every kind or nature necessary or incidental to the packing, shipping, and marketing of fruits and fruit products, and all other agricultural products; and to do all and every business necessary to, and connected with, a general packing-house supply business, lumber business, manufacturing and wharving business;

To buy, build, operate, lease, or otherwise acquire and dispose of tramways, electric railways, steam railways, and wagon roads for the purpose of transporting supplies and manufactured articles incidental and necessary to the purpose of this corporation;

To buy, build, operate, or otherwise acquire and dispose of telephone and telegraph lines incidental and necessary to the purpose of this corporation;

To manufacture, buy, sell, and deal in all supplies and articles necessary for carrying on the purpose of this corporation;

To act as agent or factor in buying, selling, and dealing in supplies of every kind necessary and incidental to the packing, shipping, and marketing of fruit, fruit products, and all other agricultural products;

To acquire by purchase or otherwise, and dispose of the same, the business, rights, property, and good wills of any person, firm, association, or corporation conducting a business similar to the business of this corporation;

To acquire, by purchase or otherwise, hold, sell, assign, transfer, mortgage, pledge, or otherwise dispose of, the shares of the capital stock of, or any bonds, securities, obligations, or other evidences of indebtedness created by any other corporation or corporations of the State of California, or any other state or any territory or in any foreign country, and while the owner of such, to exercise all rights, powers, and privileges of ownership, that

an individual might exercise, including the right to vote upon the stocks and other securities;

To aid in any manner, any corporation or association of which any bonds or other securities or evidences of indebtedness or stock may be acquired or held by or issued, in the interest of or at the instigation of this corporation, and to do any acts or things designed to protect, preserve, improve, enhance, the value of, or to make guarantees in respect to the value of any such bonds or other securities or evidences of indebtedness or stock.

Third: That the City of ——————, County of —————— and State of California, is the place where its principal business is to be transacted.

Fourth: That the period of its existence shall be fifty (50) years.

Fifth: The number of directors shall be fifteen (15) and the names and residences of those who are appointed for the first year are as follows: —

________________ ________________

________________ ________________

Sixth: The amount of its capital stock is Five Hundred Thousand ($500,000.00) Dollars, divided into fifty thousand (50,000) shares of Ten ($10.00) Dollars each.

Seventh: There has been One Hundred and Fifty ($150.00) Dollars of the capital stock actually subscribed, and by the following named persons, in the number of shares and amounts set opposite their names: —

Name	**Number of Shares**	**Amount**

The supply company is organized as a stock corporation, though it conducts its business primarily in the interest of the members. The stockholders are a large number of coöperative fruit-growers' associations. It operates two general departments, one a manufacturing department and the other a material supply division. In the former department it leases timber lands, operates mills, and manufactures box material used in the shipment of fruit; in the latter, it furnishes supplies used in the packing-houses and in the orchards. The supplies which it manufactures are furnished at the cost of the material and of manufacture, which includes charges for depreciation and maintenance of the manufacturing department, plus six per cent, on the assets and capital devoted to or invested in the department. The supplies used in the orchards are sold to the members at the cost of the supplies.

In 1911 this fruit-growers' company delivered more than twelve million boxes to its members, and three hundred and forty-seven thousand dollars' worth of orchard and other packing-house supplies. These materials represented five thousand individual orders and a net saving to the growers on the material other than the box shook of at least eighty thousand dollars. In the same year it sold $105,890 worth of fertilizer, imported six hundred tons of vetch seed for cover crops, bought twenty-eight carloads of nails or approximately twelve thousand kegs for use in the packing-houses, supplied ten million box labels and two billion fruit wrappers, or approximately one hundred and fifty carloads of tissue paper. In connection with the manufacture of box material it cut fifteen million feet of lumber, one-half of which was used in box manufacture and the remainder was sold in the open market.

CHAPTER X

COÖPERATION IN IRRIGATION

ACCORDING to the statistics of the Thirteenth Census, one-third of the irrigated land in the United States in 1909 was under coöperative enterprises. There are 13,739,679 acres of irrigated land in the United States distributed over different irrigation enterprises as follows: —

	ACRES
Individual and partnership enterprises	6,258,401
Coöperative enterprises	4,646,039
Commercial enterprises	1,444,806
Irrigation Districts	533,142
U. S. Reclamation Service	395,646
Carey Act enterprises	288,553
U. S. Indian Service	173,912
Total	13,739,499

"The most striking fact brought out by this table," says R. P. Teele, in charge of Irrigation Statistics, Bureau of the Census, in an address before the Nineteenth National Irrigation Congress, "is the very large percentage of the acreage irrigated by coöperative, individual, and partnership enterprises. Of the acreage irrigated in 1909, about eighty-four per cent was included in enterprises of this character, placing irrigation districts in this class. Of the remaining sixteen per cent, about ten per cent is included in what have been classified as commercial enterprises — those supplying water to parties who have no interest in the work. The remaining six per cent is divided as follows: Reclamation Service, three per cent; Carey Act enterprises, two per cent; and Indian Service, one per cent. As there are large enterprises in course of development, these figures for 1909 do not fully represent the present situation. The figures for 1910 gave the Reclamation Service about four per cent of the total, the Carey Act about six per cent of the total, and the Indian Service about two per cent, the decrease being principally in individual and partnership enterprises. Of the acreage included in projects, the Reclamation Service shows six per cent, the Carey Act eight per cent, and the Indian Service about three per cent, the decrease being divided between coöperative and individual and partnership enterprises.

"All Reclamation and Carey Act enterprises and many of the commercial enterprises will eventually become coöperative. Classing these with those already under the control of the water users, leaves less than ten per cent of the acreage irrigated in 1909 to be served by works which are not now or soon to be controlled by those who use the water.

"While statistics to prove the statement are not available, I believe it safe to say that in no other industry in this country is there so large a percentage of coöperation."

PROGRESS OF COÖPERATIVE IRRIGATION ENTERPRISES

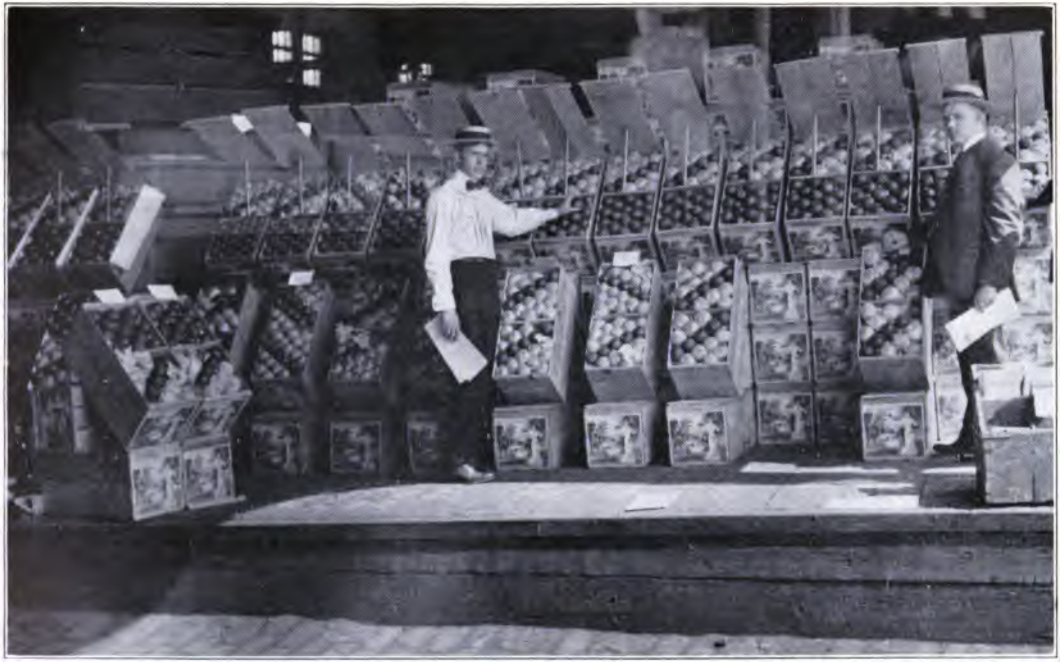
Coöperation in irrigation had its origin in the development of the arid lands of Utah by the Mormon colonies. The development of the early history is related by Samuel Fortier, who says: —

"These pioneers had little money of their own and could not obtain financial assistance from people outside of the state. Necessity, therefore, compelled them to join hands in undertakings of this kind which were too large for the individual or a partnership of individuals to construct. It may be said that coöperation is the keystone of the development of Utah. The success which attended this form of organization in the building of irrigation ditches and the utilization of water from streams spread to other industries. This is shown in the coöperative creameries, coöperative canneries, and coöperative stores that abound in this state.

"From Utah as a center this form of organization spread to other states. One finds, for example, pretty much the same type of irrigation enterprise in Montana, California, Wyoming, Nevada, and other states. In Colorado the capitalistic canal, or what the Census has chosen to designate the commercial canal, was quite popular at one time, but many of these enterprises have been reorganized as coöperative companies.

"The history of such organizations can be best understood by reference to a particular canal, namely, the Logan, Hyde Park, and Smithfield Canal Company of Logan, Utah. This was begun in June, 1881. The interest in the ditch is represented by stock, there being 2498 shares having a face value of $5 each and a present market value (June, 1909) of $70. Stock was issued in pay for work mainly. This company does not figure on any definite number of shares to the acre. Some land requires two shares per acre for irrigation, others four or five. Each share has one vote. There are five directors elected for

PLATE XIV. — Buyers examining Citrus Fruit at Auction. New York. Chapter VII.



a term of two years, and these elect their own president and vice-president. The directors appoint a secretary-treasurer, who receives a small annual salary. The water master distributes the water under the direction of the board of directors. The company controls all laterals and shares except 315 shares of stock held for the town of Smithfield for town use. Smithfield is allowed one director and is practically under the control of the main organization. The area of land under the ditch is 2500 acres. This, like other similar companies, is incorporated under the law of the state of Utah. The works were constructed by day labor by the water users under the direction of one of the directors, one director taking charge of a certain length of canal and overseeing the job. A few settlers borrowed money and paid cash for their portion of the cost. The annual assessment averages about seventy cents and the total annual revenue about $1750. Dividing the total expenditures between the nine miles of main canal gives an annual cost of about $195 per mile."

METHODS OF ORGANIZING, FINANCING, AND OPERATING WATER COMPANIES IN SOUTHERN CALIFORNIA

The methods of organizing, financing, and operating water companies in Southern California are described by C. E. Tait, Irrigation Engineer, United States Department of Agriculture. The methods are similar in other states. Mr. Tait says: —

"Water companies are principally of two classes, public service companies and coöperative or mutual companies.

"Public service water companies are private business corporations that sell water for profit. The capital stock theoretically represents the investment or the cost of water rights, water-bearing lands, work done in developing water, and of irrigation works. The companies deliver water to users at fixed rates, the charges sometimes being so much per irrigation per acre with a minimum charge for the season, but more often being in proportion to the quantity of water used. Until the passage of the Public Utilities Act, the law of California made it the duty of county supervisors when properly petitioned by a certain number of taxpaying citizens to fix the rates charged by a public service company to give a fair profit on the value of the system. In many cases no request was made to have the rates fixed according to law, and the water charges have been regulated by contract between company and users, the latter often being dealt with as an incorporated mutual company having its own distributing system. Such contracts are accepted where rates have not been officially established, but cannot be made to conflict with legal rates. Sometimes a bonus or its equivalent has been exacted from the water users in addition to the water charge, but companies of this class can be forced to give reasonable public service without discrimination and without collecting a bonus. The Public Utilities Act of 1911 gives the State Railroad Commission power to not only fix the rates of public service water companies, but to practically regulate their entire business, including manner of service, measurement, accounting, incurrence of indebtedness, etc.

"Coöperative or mutual water companies are organized by land-owners for the purpose of supplying water for the irrigation of their own lands at cost and without profit to any one. A mutual company is a special form of private company in which the stock represents water rights and is owned entirely by those to be served, the classification being one of general custom rather than a legal distinction. Most of the mutual companies originated in one of three ways: some grew out of the failures of state irrigation districts; others were promoted and fostered by land companies; and still others were organized by settlers directly, without the aid of other agencies.

"Many districts were organized in Southern California soon after the passage of the State Irrigation District Law, and most of these failed, because of insufficient water supply, mismanagement of funds, defects in the law itself, and various other reasons. Where the districts had been for worthy projects, mutual water companies were organized to succeed them, the companies taking over the property of the districts at its value.

"It is probable that a majority of the mutual water companies originated subsidiary or promotion companies having lands to sell. The promotion or parent companies were usually known as 'land and water companies.' Their methods were to acquire large tracts of land, often Spanish claims, and subdivide these for sale to settlers. They also developed and provided water for the irrigation of the land they had for sale. They then caused the organization of mutual water companies, the latter as a rule having only a few first settlers, perhaps stockholders or agents of the parent company, as the original members. The usual method was to turn the capital stock of the mutual company over to the parent company in exchange for the water system. The system would include the water rights, as well as canals, pipe lines, pumping plants, reservoirs, and such other works as might have been constructed by the parent company. The parent company would then reimburse its treasury by selling shares of stock in the mutual company, together with land, to settlers. In this way the control of the mutual company, which originally rested in the parent company, passed to the settlers as soon as more than one-half of the shares had been sold.

"Other mutual companies were organized by landowners directly, who associated for the development of water resources and the construction of irrigation works. In such cases the systems were built a little at a time and not completed for several years after the work was begun, this being the result of the way funds were secured for construction. Funds have been raised by subscribing capital, by direct assessment of the capital stock, by small loans and by bonds. In a few cases the settlers coöperated in building works by their own labor. Bond issues must be authorized by a two-thirds of, and must not exceed the amount of, the subscribed capital stock. Mutual company bonds are not as marketable as municipal bonds except where the issue is large enough to justify special investigation of the project by bond buyers. Bonds of small mutual companies have been disposed of through contractors doing the work for which the bonds were issued. Banks frequently loan money to mutual companies of recognized standing on corporation notes and to new mutual companies, provided the notes are indorsed by directors or stockholders personally able to furnish the required security. Some of the most efficient irrigation systems in Southern California and in the United States have been constructed piece by piece by land-owners with no other aid than small loans from local banks.

"Under some of the mutual companies in the fruit districts it was originally intended to have one share of stock, with par value of $100, for each acre to be irrigated. As a rule a share represented the equivalent of one-tenth miner's inch of water flowing continuously, although this varied to some extent. Sometimes there were ten shares per acre, with par value of $10, so that the valuation per acre and per miner's inch was about the same. Experience proved that one miner's inch was hardly sufficient for ten acres of mature citrus orchards, but that it was enough for seven or eight acres. Extra shares in water companies were purchased by orchardists to provide the additional water needed for full-grown trees, so that the par value of an acre water right, based on present use, is about $125. Under other companies one miner's inch served only five acres from the start. The market value of shares is influenced by supply, demand, and various local conditions as well as the original cost, and acre rights are now valued at from $100 to $300 for citrus fruits.

"A mutual company may legally provide in its by-laws that each of the shares or water rights be appurtenant to certain land, but often the water is instead made appurtenant to the entire tract as a whole which the irrigation system serves, then stock may be transferred within the tract separately from the land if the transaction is entered on the books of the company.

"There is no fixed rule by which mutual companies provide funds for expenses. Some secure all money by stock assessments; others by a charge for the water delivered. The most satisfactory plan is to assess the stock for maintenance and permanent improvements and to have a water charge to meet operating expenses. Since betterments to the property enhance the value of the stock, the shares should be the basis of payment for such work. Operating expenses should be distributed among members according to the service rendered each, for water is not always used in proportion to the number of shares held by each.

"Most mutual companies deliver water to stockholders only, but some deliver to non-members when service to members is not interfered with. The water charge to non-members is at a higher rate, especially where the company's stock is assessed. The unit of measurement and of the charge in the orchard districts is the miner's inch per hour. Charges to mutual company members vary from one-half cent per hour inch for gravity water to three cents per hour inch for water pumped with a high lift. The cost of water per acre for citrus orchards varies from $5 to $20 per year except in extreme cases. The higher figure is representative where interest and principal is being paid on bonded indebtedness, and the lower figure, where there is no indebtedness, and gravity water. The Imperial Valley mutual companies use the acre foot as the unit of quantity and the cubic foot per second as the unit of measurement of flowing water. The water rental is 50 cents per acre foot, while the stock assessments amount to $1 to $1.50 per acre annually. Alfalfa in this valley requires from three to three and one-half acre feet of water per acre each year and most other crops more than half as much.

"Mutual companies are controlled by a Board of Directors elected annually by the stockholders. The directors elect one of their number president. The Secretary keeps the books and records and computes and collects charges for water. The work of water delivery and maintenance is placed in charge of a superintendent. Large companies have zanjeroes to assist in delivering water.

"When the crops under an irrigation system are of the same class, such as citrus fruits, it is usual to deliver water by rotation. A stream or head is used in succession by stockholders along a lateral pipe or ditch, the complete circuit or rotation being completed in a specified time, usually about thirty days, and the time of use by each stockholder being proportional to the number of his shares. Schedules of rotation are made in advance for the entire season, so that each stockholder knows the time of the month that he is to have the water. The water need be measured only at the head of the lateral, then the number of hours that the water is used by each stockholder when recorded is sufficient to compute the water charge. Heads from thirty to sixty miner's inches are delivered for ten-acre citrus orchards, and the length of an irrigation ranges from twelve to forty-eight hours. Sandy soil requires a large head for a short time, while tight soil requires a small head for a longer time. Where the crops under a system are diversified, delivery by rotation, although the most economical, is not always practical on account of the different water requirements of the crops as to time and frequency of irrigation and the size of head.

In such cases it is usual to deliver on order of the stockholder within certain reasonable limitations, the water being measured at each delivery point. Each stockholder may be entitled to a certain amount of water each month, preference of time of delivery being in order of application.

"Mutual water companies are incorporated in California under the law for the incorporation of private companies. Three or more persons may incorporate. Articles of incorporation as prescribed by law must be filed with the county and the state, whereupon the latter issues a certificate of incorporation. The articles should declare the purpose of the organization broadly enough to permit the conduct of all business unhampered, but should state that water is not to be sold for profit. The corporation should then adopt by-laws that are consistent with the constitution and laws of the state. The by-laws should specify the duties of the officers, regulate the service, and define the relations of stockholders to the company. In the light of present experience only a few suggestions may be made for new organizations regarding changes from the usual form and methods of the better companies now operating. The water should be capitalized at a figure that will cover the entire cost of making it available for the irrigation of the land, exclusive of operating expense. This usually includes cost of real estate, water rights, rights of way, construction of works, engineering, and all incidentals to preparing the system for service. A fair capitalization for pumped water in the fruit districts is $1000 per miner's inch. As there is practically no surface water without storage left for appropriation in the streams of Southern California, the value of gravity water now exceeds its original capitalization and varies more than the value of pumped water. It reaches $2500 per miner's inch in some localities. Small shares of stock are convenient and require less dealing in fractional shares. If the capital stock be divided in shares of par value $10 each, then in the case of pumped water at $1000 per miner's inch, each share entitles the holder to the use of one-hundredth part of a miner's inch; and if a miner's inch serves eight acres, the stockholder with a ten-acre orchard will have one hundred and twenty-five shares.

"It is not necessary that the number of shares to the acre be specified, for there are other ways to encourage the economical use of water, but it is recommended that the water or the shares representing water rights be made appurtenant to the land to be irrigated by the system and to the adjacent lands. The adjacent lands are included only because water may sometimes be used more economically than is expected, in which case some of the shares may be transferred to land joining the original tract and the service of the company extended without increasing water supply or capital stock. There is a disadvantage in a member owning more shares than necessary for the irrigation of his land, as the stock is assessed for the maintenance of the system, and this together with the provision for appurtenance prevents speculation in stock. Where there is no indebtedness, assessments need not be levied annually but only as required by new works, extensions, or special repairs. A water rental or charge just sufficient to meet the ordinary or operating expenses is consistent with the stated purpose of a mutual or non-profit company, and it not only fairly apportions the cost of water delivery among the members, but it also very effectually induces economy in the use of water by members. Such a charge may be adjusted annually by the directors in consideration of whether a surplus or a deficit was produced the previous year.

"The mutual water company has been the most successful form of irrigation organization in Southern California, and its efficiency has been demonstrated elsewhere in this and other states. The largest mutual companies in the citrus belt irrigate about 20,000 acres. The largest mutual company in the United States is in Imperial Valley and irrigates 100,000 acres."

CHAPTER XI

RURAL CREDIT

In many European countries the farmers have organized banking systems on the coöperative plan through which to supply credit to carry on their farming operations. There are several forms of rural credit institutions abroad. Three leading systems originated in Germany: first, the Raiffeisen, or rural credit banks, which were founded in 1849 by Herr Raiffeisen, a burgomaster of Weyerbusch; second, the Schulze-Delitzsch, which are part rural and part urban credit banks, founded about the same time by Herr Schulze, mayor of Delitzsch; and, third, the coöperative non-profit societies, the Landschaften as they are called, organized within a province and obtaining credit for the members by means of bonds guaranteed by the landowners of the province collectively. The Landschaften banks originated during the last of the eighteenth century. The Raiffeisen and Schulze-Delitzsch banks were organized after Germany had passed through a terrible famine in 1846 and 1847. There was great distress among the small farmers, who, on account of the social and economic conditions then prevailing, were thrown into the hands of the unprincipled usurers from whom alone they could obtain the necessary credit to carry on their business. These systems of credit have been widely adopted in

Europe, Asia, and in Canada, but not to any extent in the United States.

NATIONAL INTEREST IN RURAL CREDIT

There is a general interest in the subject of rural credit in the United States on account of the high rate of interest which the farmer is supposed to pay for his credit when compared with other lines of business and the difficulty of obtaining ample credit in some parts of the country. In foreign countries, the governments play an important part in the development of the coöperative method of conducting business, but it is only recently that Mr. Roosevelt, through the appointment of the Country Life Commission, directed the attention of the country to the need of a wide application of the coöperative method to the solution of rural life problems, that our own government has taken official cognizance of the coöperative method as a means of upbuilding better farming and better rural business conditions. The comprehensive monograph[1] of the European systems of rural credit by Dr. Lorenzoni of the International Institute of Agriculture still further stimulated the interest and led the Southern Commercial Congress to hold a conference on rural finance in Nashville, Tennessee, in April, 1912, and to organize a commission representing each of the states to go abroad in 1913 to study the systems of rural credit and to report to the International Institute of Agriculture, the commission having been indorsed by a joint resolution passed in the Senate of the United States. The American

---

[1] "An Outline of the European Coöperation Credit Systems," International Institute of Agriculture, Rome, 1912.

Bankers' Association has also investigated the rural credit question abroad.

As a result of the widespread interest in the subject, the credit welfare of the American farmer has suddenly become a live public question. The 62d Congress authorized the President to investigate the operations of the coöperative land mortgage banks and coöperative rural credit unions as they relate to agriculture and rural conditions in foreign countries. Through the diplomatic officers in Europe the Department of State has been investigating the question, and a preliminary report has been prepared by Ambassador Herrick and has been transmitted to the governors of the states by President Taft, together with his suggestions concerning the establishment of a rural credit system in the United States. The President has also invited the governors at the next annual conference with him "to consider means for the adoption of an agricultural credit system as a benefit to the American farmer." In order that the requirements of the farmer shall not be overlooked, each of the three leading political parties in their platforms in 1912 recommended an investigation of the foreign agricultural credit systems so that it may be ascertained whether a rural credit system may be adapted to the conditions of the United States. The abundance of the interest of so many agencies in the farmers' credit welfare, insures a wide consideration of the relation of our banking system to the needs of agriculture and in the end should result in a more elastic rural financial system.

COÖPERATIVE CREDIT UNIONS IN THE UNITED STATES

There are a number of coöperative credit unions in the United States and in Canada, especially in the Province of Quebec, where there are a number of mutual banks that furnish credit to the farmers. In Massachusetts, the coöperative credit unions have been encouraged by the enactment of laws permitting the incorporation of credit unions. The Meyrick credit union at Springfield was the first to incorporate under the law, and at the end of one year it had 105 members, a capital of $3000, and $10,000 in outstanding loans. In 1911, thirteen new unions were formed, with a combined capital of $25,000.

THE JEWISH CREDIT UNIONS

The Jewish Agricultural and Industrial Aid Society, according to data furnished by Mr. Leonard G. Robinson, the General Manager, has established eight credit unions during the past two years, with a membership in June, 1912, of 240. They have 836 shares outstanding, with a total capital of $4180. These unions have been in operation on the average seven months, and during that time they have granted loans aggregating $17,755, or more than four times the capital. The repayments have amounted to $7525.52, or nearly one-half of the amount loaned. Their net profits for the period amount to $308.65, or at the rate of more than 12½ per cent per annum, all of which has been placed in the reserve fund.

The plan of these credit unions is set forth in the Annual Report of the society for 1911 as follows: —

"Our plans for the establishment of coöperative credit associations or banks, which we had under consideration for the past two years, and of which mention was made in our last annual report, have this year materialized, and we now have three such associations in operation: the Jewish Farmers' Coöperative Credit Union of Rensselaer County, New York; the Jewish Farmers' Coöperative Credit Union of Fairfield County, Connecticut; and the Jewish Farmers' Coöperative Credit Union of Ellington, Connecticut."

The objects of these Credit Unions are fully set forth in their 'Articles of Association,' which are here quoted: —

> "WHEREAS, a system of personal credit, whereby short-term loans for productive purposes can be obtained for moderate amounts and on easy terms, is of prime importance to those engaged in agriculture; and
>
> "WHEREAS, our faith in the benefits of coöperation and mutual self-help leads us to believe that a loan association managed coöperatively will best satisfy the needs and conserve the interests of the Jewish farmers in the vicinity; be it
>
> "RESOLVED, that we, the Jewish farmers of ———, hereby associate ourselves into a voluntary or unincorporated association to carry out the objects above set forth."

"Each of these Credit Unions raised $500 through the sale of shares to members, and our Society loaned them $1000 — two dollars for every dollar raised among themselves — bearing interest at the rate of two per cent per annum. The three Credit Unions commenced operations May 1. The results of their operations for the fiscal year ending September 30 — a period of five months — are given below: —

	Rensselaer County, N.Y.	Fairfield County, Ct.	Ellington, Ct.	Totals
Number of members	35	25	24	84
Number of shares	105	102	101	308
Number of loans	31	17	18	66
Amount of loans	$1695.00	$1275.00	$1490.00	$4460.00
Average per loans	54.68	75.00	82.78	67.57
Principal repaid	474.00	547.00	158.00	1179.00

"The net profits of the three Credit Unions for the five months were $61.93, or at the rate of over 9½ per cent per annum on their capital.

"The form of organization of these Credit Unions is similar to that of the Raiffeisen Banks in Germany, upon which most other credit banks throughout the world are modeled. They are controlled entirely by the members. Shares in these Credit Unions are $5 each, and the holder of one share has the same voice and the same rights as the holder of, say, 100 shares. Membership in these Unions is open only to members in good standing of the local Jewish Farmers' Associations. The entire membership of a Credit Union constitutes the General Assembly, which has the final decision on all questions. The direct management is in the hands of a Board of Directors of seven members, four of whom are the officers, namely, the President, Vice President, Secretary, and Treasurer. The four officers also constitute the Credit Committee and are in complete charge of the granting of loans. The other three members of the Board constitute a Supervisory Committee, whose duty it is to audit the books and to supervise the acts of the Credit Committee. Appeals from the Credit Committee, as well as from the Supervisory Committee, can be taken to the General Assembly. The members of the Board of Directors are not eligible to borrow except by a two-thirds vote of the General Assembly in each instance. The loans are granted only for productive purposes or urgent needs. They are not granted for a period exceeding six months nor for an amount exceeding $100. Interest is charged at the rate of six per cent, and is payable in advance. The security is determined by the Credit Committee, and is generally the promissory note of the borrower with one or more responsible indorsements. Initiation fees and other charges, also so much of the net profits as have not been distributed as dividends, constitute the Reserve Fund of the Credit Unions."

THE COST OF CREDIT TO THE AMERICAN FARMER

The indebtedness of the American farmer is approximately six billion dollars, on which an annual interest charge of 510 million dollars is paid.[1] There are twelve million farmers in the United States and they add each year to the National wealth $8,400,000,000. They pay an average interest rate of 8½ per cent. The rate of interest paid by the farmer, as the President points out, is considerably higher than that paid by industrial corporations, railroads, and municipalities, yet the security offered by the farmer in the land on which his crops are grown is as stable as the securities offered by the corporations mentioned. This condition of affairs is due to the fact that our financial system has not been developed to meet the needs of American agriculture, and the farmer is handicapped by not being able to negotiate loans by offering the land as security for his most necessary credit needs, or to utilize his character as an asset for personal credit to the extent that a member of a foreign coöperative union may do.

---

[1] Letter of President Taft to the governors of States, October, 1912.

A better understanding of the subject may be had by a brief discussion of the credit requirements of the farmer and of his present means of obtaining the credit he needs.

The American farmer needs credit to make permanent improvements to his property, to increase its productive power, and for short-term purposes to be used for current expenses while his crops or products are maturing and especially to provide for the harvesting and movement of the crops. He now has three general ways of obtaining credit: by borrowing from an individual or other private agency on such terms as the two agree upon; by obtaining credit from a local store or other mercantile institution, giving as security, if necessary, a mortgage or lien upon his crop; and by borrowing money from a bank, an insurance company, loan and trust company, or other institution, giving such security as these agencies require. He sometimes obtains credit by using a warehouse receipt for grain, cotton, tobacco, fruit, or other crop as security for a loan.

The Individual Credit System

Under the individual credit system a farmer usually secures money from a local farmer or neighbor or a resident or distant agent who has money to loan. For a long-time loan for permanent improvement he usually gives a mortgage on the land; for a short-time loan for current expenses, a note properly secured, a crop lien, or other form of chattel mortgage or personal security. Some of the loan agents deal honorably with the farmers, but the unscrupulous acts of money lenders in foreclosing mortgages so as to obtain the farm below its value and other acts not less honorable have given the unscrupulous individual loan agent or money lender the name of "land shark," and have made this form of rural credit one of the most dangerous and expensive for the average farmer to use.

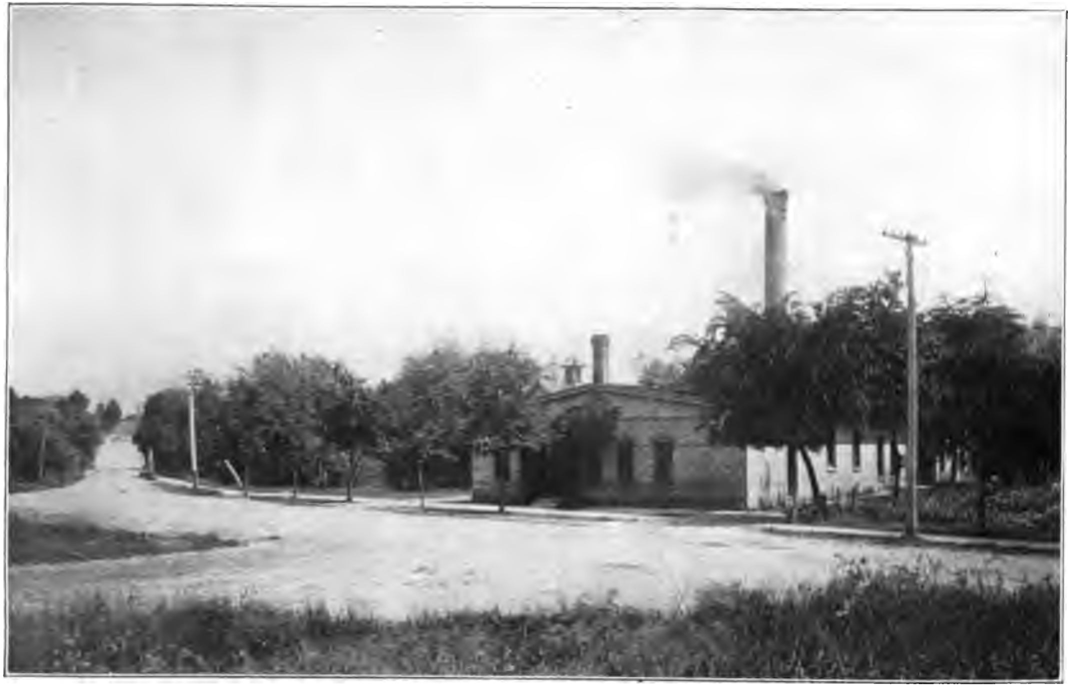
The Crop Lien

Another form of individual credit is the common practice of those who market the products of the farm to advance money to the farmers in the spring to carry on their current seasonal operations, taking as security a mortgage or lien on the crop. The system is the outcome of the personal relations that exist between the producer and those who handle his crops. The commission merchant, jobber, auction company, or warehouseman who furnishes the money, of course, reserves the exclusive right to handle the crop, and he is able to dictate the conditions under which the crop is to be sold. In many of the truck-growing and fruit-growing sections of the country this system of credit is the most common method by which capital is provided to the rural classes, and it is the only method by which many of the farmers can secure the necessary capital to conduct their seasonal operations. In the southern states a large proportion of the cotton farmers, especially the tenant farmers, secure their credit in this way. While the system is not wholly bad, it is often accompanied by the gravest abuses. By the manipulation of the crop, the unscrupulous dealer can keep the farmer indebted to him continuously. The farmer may lose his independence, he is under the control of the dealer who handles his crop, and he often pays an enormous rate of interest indirectly as a result of the way in which his crop is manipulated by the dealer. Under the chattel mortgage system the farmer may be prevented from making permanent improvements on his property, and he is likely to be in a condition of continual financial slavery to the unscrupulous agents who handle his business. Unless the crop is an unusual one and the prices are abnormally high, he may never be lifted out of debt.

The Store Credit System

Under the store credit system, of which there are many forms, the store gives the farmer the right to purchase the fertilizer, tools, feed, wagons, and other necessities needed in the household or on the farm. This form of credit is for current expenses and not for permanent improvements on the property. The storekeeper does not often loan money, though sometimes the farmer can secure direct loans by giving a crop lien or other form of chattel mortgage as security. If the character of the farmer is good and the risk reasonably safe, the credit may not need to be secured, and the bills that have accumulated at the store during the season are paid when the crops are sold. Where the reputation of the farmer is less certain and the risk correspondingly greater, and where the methods

PLATE XV.—Coöperative Creamery. Hutchinson, Minnesota. Chapter VIII.



of farming are shiftless, the credit may be secured by a crop mortgage or lien. The store system of credit in one form or other has dominated the rural life in the cotton-growing states, in the past, and it is in common use to a greater or less extent in every rural community. In the South it is combined with a crop lien or chattel mortgage form of security. It has proved to be a haphazard, unsystematic, extravagant, and often vicious system for both the storekeeper and the farmer. It prevents the permanent improvement of a community. It is based on a false security, because the lien or mortgage is given on the crop before it is developed and often before the crop is planted. In order to make the risk secure, the Southern storekeeper generally charges an average of twenty-five per cent more for the goods sold than the charge for similar supplies when bought for cash. The supplies are usually of comparatively low grade. The farmer therefore pays an equivalent of this abnormal rate of interest on his credit. To protect himself still further, the storekeeper in the cotton states may have to direct the farming operations of those to whom he extends credit, dictating the crops to be grown, the crop rotations, and the tillage systems. When an able man handles this system of credit, the agriculture of a community may be built up to a high state of productiveness, but, taken as a whole, the system is open to the gravest abuses. The farmer sells his products at the lowest wholesale price and buys his supplies at the highest retail prices. It has proven detrimental to the best interests of an agricultural community, to the social and economic advancement of the farmers, and equally detrimental to those who furnish the credit.

The average farmer who depends on store credit would save money if he would borrow at a bank on such security as he could offer and pay cash for the supplies which he purchases.

Bank Credit

Bank credit has been extended less to agriculture than to almost any other class of business, because land is not available as security for short-term loans. Yet it is the most common form of credit in American agriculture, probably more than half the credit of the American farmer being obtained from this source. Under the national bank law, which has not been revised for fifty years, money cannot be loaned on farm lands as security. The theory of the law is that a mortgage on real estate cannot be quickly liquidated to protect the bank in case of an emergency, while personal securities of different kinds which the bank is permitted to accept can be quickly converted into money,—a protection that was considered necessary when the banking system was enacted, because the obligations of the bank are largely payable on demand. The resources of the national banks must be kept in a fluid condition, and their funds can only be invested in short-term, commercial paper. The need of a more elastic rural credit system is recognized by the monetary commission appointed by President Taft to revise the national banking system, and an amendment to the national bank act has been recommended providing that thirty per cent of time deposits may be loaned upon improved and unencumbered real estate, the loans not to exceed fifty per cent of the value of the property which shall be situated in the territory near the bank.

In case of the loan and trust companies which often act as brokerage agents in placing and handling loans, insurance companies, savings banks, and other similar corporations, the investments are of a more permanent character, and these institutions accept farm mortgages as security for long-time credit at reasonable rates of interest. They do not often extend credit for short periods of time. The state banks and private banks desire to turn over their capital rapidly and do not as a rule loan money on long-time mortgages on farm lands and do not accept land as security for short-term loans. These institutions do loan money on proper security such as notes or stock certificates, chattel mortgages, and other personal security, for short-time loans.

THE NEED OF A BETTER RURAL CREDIT SYSTEM

There is less need of a distinctive rural credit system in the United States than there was when coöperative credit systems originated in Europe. While there are many abuses in handling credit available to farmers, and the rate of interest may be high when compared with loans extended in commercial business, the local and state banks that have been organized in nearly every town of several hundred inhabitants, especially in the northern and western parts of the United States, furnish credit to the farmers on personal notes, chattel mortgages, mortgages on realty, or other acceptable security. In the country these banks are often owned and managed by farmers and are organized and operated primarily for rural credit purposes. There is great competition among these local banks, and every town of a few thousand inhabitants may have several banking institutions that are successfully operated and that furnish credit to the farmers at reasonable rates of interest. Through these local and state banks, a responsible farmer who desires credit has little difficulty in securing a short-term loan provided he can offer acceptable security, and his land is available for security for long-term loans. The small farmer and especially the tenant farmer whose only security is his crops or cattle or other personal property, the whole amount of which may not be available to hypothecate as security for a short-term loan, may have more difficulty in securing credit from a bank and is forced to depend on the store as his principal source of credit. One of the fundamental difficulties in rural credit is the inelastic nature of the country banking system which restricts the credit that a rural bank can extend, and the further fact that the best security in the world, the land on which he grows his crops, is not liquid as security. The security of the farmer as well as the credit of the bank is therefore restricted. The average farmer is obliged to sell his crops at the prevailing market prices at the harvest time. He cannot hold them for better market conditions, because he has usually secured credit for a short period on the expectation of repaying it when the crop is harvested.

The agricultural credit needs have been met in foreign countries by the organization of coöperative credit banks or societies on the principle that where a group of persons combine to furnish a collective guarantee, they can utilize the security of that guarantee as a basis for obtaining credit at a low rate of interest. This collective guarantee may be in the form of a mortgage on the lands of the members of the banking society as in the Landschaften; or it may be a collective personal guarantee given by the members of a bank to repay the loans extended to the members. In the case of the Raiffeisen rural banks, unlimited liability is a fundamental part of the system; in the Schulze-Delitzsch system, the liability of the members may be either limited or unlimited. In the rural credit systems of this type the collective personal guarantee as pointed out by Dr. Lorenzoni is in fact indirectly a property security.

Based on these collective guarantees, capital is secured for the members in a variety of ways. In all cases it is readily secured from the large banking institutions at low rates of interest. In France the government furnishes the main source of capital for the coöperative banks. In Germany the Landschaften issue bonds and secure their capital from the investing public; the Raiffeisen banks depend on their current deposits, savings deposits and reserve funds, and on the loans which they obtain from the central and other banking institutions.

The following are the principal safeguards for loans given on personal security in addition to the loans secured on mortgages as outlined by Dr. Lorenzoni to whom the author is indebted for a large part of the data included in the rural credit discussion.[1]

"(1) That loans are only made to members of the group and that only persons known to be trustworthy are admitted;

"(2) That membership is confined to persons residing within a small district and that, therefore, the members are personally known to one another;

---

[1] "An Outline of the European Credit Systems."

"(3) That the members being mutually responsible, it will be to the interest of all members to keep an eye upon a borrower and to see that he makes a proper use of the money lent to him;

"(4) That, in like manner, it is to the interest of all members to help a member when he is in difficulty;

"(5) That the borrower is required to find sureties or give other collateral security for the repayment of the loan;

"(6) That the borrower binds himself to apply his loan to a specific purpose which will bring in a monetary return sufficient to enable him to repay the same when borrowed, to pay the interest charges, and to leave a profit to himself."

A brief discussion of the leading foreign coöperative credit systems may be helpful in the consideration of coöperative credit as a means of meeting the needs of the American farmer, but as the question is receiving consideration from various official and unofficial sources, no attempt will be made to apply the foreign methods to American conditions or to suggest the steps that may be taken to make the American financial system better adapted to our rural credit needs.

THE RAIFFEISEN BANKS

The Raiffeisen banking system is designed to meet the credit needs of the small European farmer. The system is founded on a code of moral and educational principles to which are added the unlimited liability of members, gratuitous management, and operation for the members at cost, and a restricted area where the members know each other intimately.

Organization and Management

A number of farmers in a community join and form a coöperative bank in which the members are jointly liable for the debts of the association, and each member is liable for his neighbor as well as for himself. Each member owns a limited number of shares of stock, usually only one. The average amount of paid-up capital of each member in Germany in 1909 was less than five dollars. The interest paid on the stock is the same as the interest paid by members on loans. Each member has one vote in determining the policies of the association. The profits from the banking operations are carried in the reserve and are prorated to the members. The management of the bank is in the hands of the entire membership which acts in a body known as the General Meeting. The General Meeting intrusts the management to a supervisory council and to an executive committee or committee of management, and to a treasurer, all of which are appointed by the General Meeting, the treasurer usually being the only paid employee of the bank.

The Working Capital

The working capital that the Raiffeisen bank uses to loan to its members is derived from the paid-in capital of the members, the reserve that has been accumulated in the past, the current deposits and deposits in the savings department, and the money which is borrowed from individuals, from the central coöperative banks, or from other banking institutions. The working capital of the fifteen thousand Raiffeisen banks in Germany in 1909 was $461,089,632, one and two-tenths per cent of which was share capital, two and six-tenths per cent reserve, nine and eight-tenths per cent current deposits, seventy-five and two-tenths per cent savings deposits and eleven and two-tenths per cent other liabilities. The capital of the bank itself, that is, the share capital and the reserve, forms three and eight-tenths per cent of the total volume of capital in use, and eighty-five per cent of the capital is furnished by the current and savings accounts of the members. Under the Raiffeisen plan less than four per cent of the total volume of business transacted in Germany in 1909 was represented by the paid-in capital of the bank, *i.e.* the reserve and paid-in capital stock. It is pointed out by Dr. Lorenzoni that of the two billion marks loaned to the farmers in 1909, eighty-eight and eight-tenths per cent was provided by the savings and deposits of the farmers themselves, or deposits made through local pride. It will be seen from these data that an enormous business is transacted by the Raiffeisen banks on a very small capital.

The Loaning of Money

The money loaned to the members of the Raiffeisen banks are both short-term and long-term loans. About one-third of the loans are of the short-term variety and are principally for current expenses. The member secures his loan by the indorsement of the notes by other members, the deposit of stock certificates, valuables, or other acceptable forms of security, by mortgage on the land, or in some cases by an unsecured personal note. The greatest security, however, lies in the collective interest of the members in the banking system, the interest of every member in the financial affairs of his neighbor, and of the great financial strength that comes to an institution that is founded on a mutually coöperative rural banking system in which the character of every member and the purpose of his loans is known and passed upon by every other member.

The Federation of the Raiffeisen Banks

There are two kinds of federations in Germany with which the Raiffeisen banks are identified. The coöperative societies of different kinds formed in a province on the Raiffeisen plan usually join and organize a provincial federation, and these in turn are federated into the National Federation of Darmstadt, Germany. The object of these federations is to look after the general questions that affect all of the associations alike, to protect their mutual interests, and to develop the coöperative movement among the rural classes by propaganda and education. In 1910 the National Federation in Germany was composed of forty-one provincial federations, and they in turn included, on June 1, 18,962 coöperative societies of which 12,894 were coöperative credit associations.

In addition to the federations mentioned in the preceding paragraph, the banks of a province are federated into a central bank for strictly banking purposes, and the provincial banks are again federated into two national central banks. These banking federations and the federations for propaganda, protection, and education are closely affiliated and are members of each other's organizations, the officers of the one frequently managing the affairs of both. The function of the provincial banks and of the central banks is to furnish capital to the local banks and other coöperative societies within the federations and to the provincial banks on the same principle that the local bank furnishes capital to its members. It is the means of making the coöperative rural banking system provincial and national in scope.

THE SCHULZE-DELITZSCH BANKS

The Schulze-Delitzsch banks are formed to meet the commercial and industrial needs of the towns and cities, but they are utilized to a large extent by the better class of farmers who are also members of the banks. Their business is conducted more like modern banking institutions. They have a large capital, pay good dividends, and have either limited or unlimited liability. Most of the Schulze-Delitzsch banks are affiliated into provincial federations. There were 939 of the Schulze-Delitzsch banks in Germany in 1910 with a membership of 600,000 and loans amounting to 4,015,900,000 marks. The average membership of the Schulze-Delitzsch banks in 1910 was 639, of the Raiffeisen banks 92, while the total membership of the latter banks was 1,163,186. The membership of the Schulze-Delitzsch banks is made up of farmers who cultivate medium-sized places, wage earners, professional men, artisans, merchants, and others, the farmers forming the largest single class. About 60 per cent of the Schulze-

Delitzsch banks are founded on the unlimited liability plan, this form being considered safest in sections that are not familiar with coöperative credit. The average share capital per member in 1910 was 360 marks as compared with an average of 19 marks in the Raiffeisen system.

The Working Capital

The working capital of the Schulze-Delitzsch banks in 1910 in Germany was $346,743,897, 14.8 per cent of which was share capital, 6.5 per cent reserve, and 78.7 per cent capital from outside sources. The proportion of the bank's own funds in 1910 was 21.3 per cent in the Schulze-Delitzsch and 3.8 per cent in the Raiffeisen banks. The principal function of these banks is to furnish short-time credit, 41.5 per cent of the loans being of this nature, while only 10 per cent were on mortgages. The Schulze-Delitzsch banks are federated into thirty-two provincial federations which include also coöperative societies of other kinds. These provincial federations are affiliated with the General Federation of German Coöperative Societies. They have not federated into a central national banking institution as the Raiffeisen banks have, though the movement of these funds and the equalization of their debits and credits are facilitated by the Dresden bank, a private institution.

THE LANDSCHAFTEN

The Landschaften are coöperative banking institutions in Germany formed collectively by the proprietors or landlords of a province or other administrative unit to obtain for their members the credit they desire in making permanent improvements on the land. They are long-term land credit banks. The credit is obtained on the security of a collective mortgage on their lands which is syndicated into a bond. The security also includes the assets of the associations and ultimately the unlimited liability of all its members. These bonds are sold to the investing public, and the funds derived are used in making loans to the members. There are twenty-five of the coöperative land banks in Germany, the first having been formed at the end of the eighteenth century. The total amount of bonds issued by the Landschaften in 1909 equaled $653,294,429.

The Landschaften are managed by an assembly of land-owners and an executive committee. Those of the Committee having legal knowledge may receive pay for their services; the others receive traveling and incidental expenses only. The business of the Landschaften is inspected by the government, and the employees are indirect employees of the states.

In granting loans, a proprietor makes a request for the loan, giving a detailed statement of the object. The funds for the loan are secured by the sale of the bonds issued by the Landschaften, and the amount loaned a member may equal from one-half to two-thirds the value of his land. The estates of the land-owners who are members of the Landschaften taken collectively form the security for the bondholder.

Concerning the Landschaften, Ambassador Herrick states:[1] "Originally a Landschaft did not give cash to a member in exchange for his mortgage. It gave him a bond which simply contained a promise to pay in the event the interest and principal could not be collected from the debtor. The bond was of the exact size of the mortgage, primarily secured by it, and made payable to bearer on a few months' notice. In case of default the holder had to resort to foreclosure proceedings, so the bonds had only a limited circulation, and were often sold below par. This was but a slight advance on private money lending. Later the associations undertook to collect the interest and principal. Finally they assumed direct responsibility, and began to give cash to members for their mortgages, raising funds for this purpose by issuing and selling bonds of even denominations for large and small amounts. The practice of requiring mortgages to be paid in lump was abolished, and in place thereof the loans were made repayable by annual installments running through a long period of years, and the installments were set aside for redeeming the bonds. These steps brought about a complete revolution in land credit, and marked the beginning of the land-mortgage business as it is known to-day. The whole theory of the organization of land credit is based upon this debenture bond and system of amortization and sinking funds devised and introduced by the Landschaften. One without the other two is useless. The three must be combined, and also coupled with strong management under wise laws in order to attract a steady flow of cheap money to agriculture. It is remarkable that this truth has never been realized or applied to the United States for farm-mortgage loans. In spite of the example of practically every nation in Europe for generations, the lending of money on mortgage in America still remains largely a mere brokerage business, unrestricted by proper governing laws, either by individuals or corporations, while mortgages continue to be drawn up for three or five years, when experience shows that the average life of a loan is far in excess of that period and needs to be renewed time and again, with added expense to the debtor and trouble for the creditor. Had the European amortization system been employed, the companies dealing in western farm mortgages between 1890 and 1894 probably would have escaped the misfortunes that brought them down to ruin.

---

[1] Preliminary Report on Land and Agricultural Credit in Europe. Division of Information. Department of State, October, 10, 1912.

"Amortization is simply a method of paying off a loan by returning a little of the capital each year. These payments are called annuities, and are composed of the interest and contributions to the sinking fund and the cost of conducting business. They are calculated for periods of 10 to 75 years, and at the end of the period the mortgaged debt becomes extinguished, and the property returns to the owner free and clear of all encumbrances."

The New Landschaften

"These new institutions are of different patterns. Several are annexes to the older societies, but most are independent and resemble ordinary mortgage banks, except in the essential point that they have no share capital earning dividends. They are, as the old societies, simply syndicates of borrowers formed to supply proprietors with capital on the lowest possible terms and repayable in the easiest manner. They are gratuitous intermediaries between the outside capitalists and the borrowers, and while performing services of the highest importance in testing the security offered by the borrowers, and in guaranteeing to the public the safety of the capital lent by them, they charge absolutely nothing for their services beyond a small commission, perhaps one-fourth of 1 per cent or even one-tenth of 1 per cent, to cover actual expenses. It is usual for each association to be restricted to a particular area of operations within which every proprietor, whether noble or peasant, may obtain a loan if he can offer sufficient security. There is always a minimum limit either to loans or to the value of property on which loans will be given. This is usually low. In the new Bradenburg Landschaft, affiliated to the old Kur-und-Neumark Landschaft, loans may be granted on property having a net income of only $25. The minimum limit is seldom even approached.

"Members are those who borrow from the bank. They are generally responsible in all their property, not merely for their own borrowings, but for the debts of the society to the outside public. But in some cases only the property pledged to the society is responsible; in others they are bound, in case of need, to pay a sum proportionate to the amount of their own borrowing. There are no shares to be paid up except in two societies. These two resemble coöperative societies, for the shares are personal and nontransferable, are of unlimited number, varying with the number of members, and their value is claimable by a withdrawing member. The share seems to be demanded simply to provide a first working capital and the nucleus of a reserve. The amount of the share is frequently a certain percentage of the amount of the loan required. Some societies demand an entrance fee of a few cents, which goes to the reserve. This reserve will be dealt with below.

"The societies in general, having no share capital, do not lend their own funds. The candidate for a loan asks that debentures may be issued against a mortgage of his property. This is then examined. If the security is approved, the candidate executes a mortgage deed to the society, which thereupon issues debentures which are placed on the market and, being sold, provide the funds for the loan. In the old banks the debentures are simply handed to the borrower, who sells them for himself. In the new land banks either this is done, or the bank sells them and pays the borrower the value if below par, or if they sell above par, then the face value, the surplus going to the reserve; or they simply issue debentures on the market and pay the borrower the amount of the loan as settled. It will be seen, then, that the banks have no capital and no need for it.

"The debentures are for the usual class, secured not by the particular mortgage on which they are issued, but by the whole mass of mortgages held by the bank and by all its proper forms of security, viz., the property of the members, the reserve or guaranty fund, and even the sinking funds. In some banks a debenture holder has the right (never needed, however) of requiring a court to assign a particular mortgage against his debenture as a specific security in case the bank should fail to pay him his interest or capital due. A debenture holder cannot demand payment of his debenture, except when it is drawn for payment. But the bank can call in any at six months' notice, besides withdrawing them by lot in the usual way. These debentures enjoy an excellent position, the 4 per cents selling usually at or above par. Since cheapness of loans is the sole object of the bank, it is customary to call in debentures selling at a premium and issue a fresh series at a lower rate.

"Loans are usually applied for to the district committee which each bank has, with a statement of the property, the amount required, and all documents necessary to prove title and freedom from encumbrance. Properties may be valued by a special valuation; or a multiple of the net income, as assessed to the land tax, may be taken. In both cases, however, an inspection of the property is necessary unless under a special rule. Half to two-thirds of the estimated value is allowable as a loan. The interest paid by the borrower on the loans is that paid by the bank on the debentures, the bank being merely an intermediary between the borrower and the actual lending public. But where the bank pays the loan in cash it charges such interest as it thinks proper, in order to make up any loss should the debentures sell below par. Loans are repayable almost entirely by amortization, usually in about 53 years. Some short-term loans are granted with corresponding debentures. The bank cannot demand repayment of a loan except in case of waste, deterioration, or the like. On the other hand, the borrower is at liberty to repay in whole or in part whenever he pleases, but must pay the entire interest for the half year in which he repays. The loan is repaid by an annuity consisting of the interest, sinking fund (usually beginning at one-half of 1 per cent), with a contribution to the reserve or guaranty fund, and another for the expenses of administration. The annuities have totaled 6 per cent, but they now average around 4 per cent or lower — *e.g.* interest being 3 per cent, sinking fund one-half of 1 per cent, guaranty fund one-fourth of 1 per cent, and expenses one-fourth of 1 per cent. Some of the banks also require a lump payment on the grant of the loan of 1 or 2 per cent to be credited either to the working or to the guaranty fund. The working fund is formed by the contribution made for the expenses of management and any special sources."

CHAPTER XII

THE RURAL TELEPHONE

THE development of the rural telephone service during the last generation has been a leading factor in the amelioration of country life conditions. According to data compiled by the Bureau of the Census[1] there were 17,902 farmers' telephone lines in the United States in 1907, including 565,649 telephones; the largest development of lines occurred in Iowa, Missouri, Illinois, Kansas, Indiana, and Ohio. At the same time there were three hundred and sixty-eight mutual or coöperative systems which are organized principally in the rural districts operated by the commercial companies.

A farmers' telephone system as understood by the Census Bureau is one that has no regular exchange or central of its own, but which may or may not be connected with the exchange of a Bell or of a commercial or mutual system. These lines are not incorporated. A mutual or coöperative system is operated primarily for the convenience of its members, and not for profit. The members are assessed to pay expenses of operation, maintenance, and extension. Many of these coöperative associations are incorporated. The commercial systems are operated primarily for profit and comprise the Bell system and independent commercial companies.

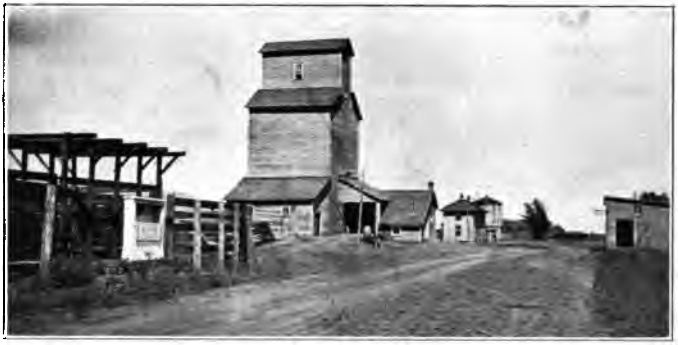
---

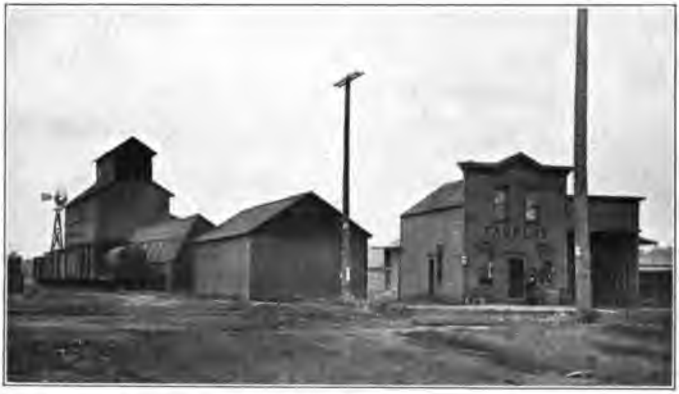
[1] "Telephones," 1907.

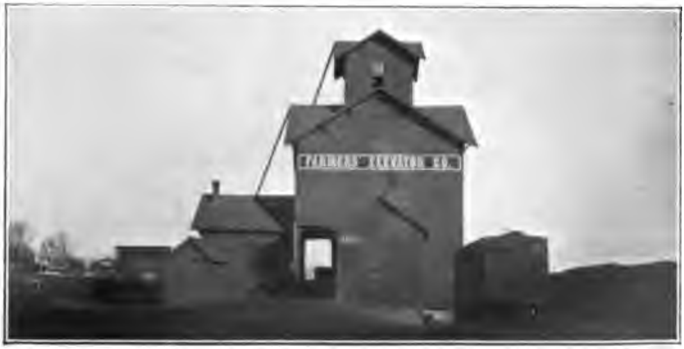
The rural telephone service dates back thirty-three years ago when the Bell Company, which then controlled the patents, leased telephones to be used between the residences of a community. They were not exchange telephones, and under this system the farmers of a community could enjoy a telephone service, though they were not connected with any other line. The next step occurred in the early eighties, when these independent circuits were connected through an exchange. After 1893, when the principal patents on the telephones expired, the farmers began to organize their own lines, the movement being aided by the Bell and other commercial companies in order to develop a large rural service that would eventually be connected with the great trunk systems of the Bell Company. The evolution of the rural telephone system is thus related by the Bureau of the Census. —

"In those communities where the farmers have built their own telephone lines, the original form of organization has been purely mutual. Construction has been a coöperative work, and the association of the farmers the most primitive type of corporation. The establishment and development of such farmers' telephone systems have usually gone on along evolutionary lines, and have followed more or less closely the form herewith outlined. A group of farmers who lived within a reasonable distance of one another, having come to the conclusion that telephone service was an essential comfort of life, and that it had already passed from the region of luxuries into the field of necessities, would meet together and arrange to establish a telephone system which should connect them with one another. The work involved in constructing such system

PLATE XVI. — Farmers' Coöperative Grain Elevators. Chapter VII.







would be so divided that each member of the association would contribute an equivalent part of the material and labor. If the country was wooded, the farmers making up the association agreed to cut and supply the poles and to haul them to the places where they were needed. In many cases it might happen that one member of the group of farmers had a wood lot and could supply all the poles, and he would agree to furnish a sufficient number of poles, while the other members of the association would take charge of the work of setting them and stringing the wires. The farmers' boys and the farm hands did the work of setting the poles and putting on the cross-arms, which would in many cases be hewn out of native timber. The wire and the insulators, the switchboard and the instruments, would have to be bought, and so a cash assessment would be levied on each member to make these purchases. If it became necessary to buy poles because of the lack of suitable timber in the district, the assessment had to be proportionally increased. The work of stringing the wires and installing the instruments was taken up by the mechanically-minded farmers and their boys, and in a very short time a complete telephone system was in operation. The switchboard was placed in the house of one of the members of the association situated at some convenient point, and the operation of the lines was attended to by the wife and daughters of the farmer in whose home the board was located.

"A strictly mutual, isolated system of this kind sufficed for a while to give all the telephone service this particular group desired, but it was not long before progressive farmers realized the need of connection with the outer world.

Negotiations would therefore be opened with the telephone company operating in the nearest town, the town with which these farmers did their usual trading, for a contract by which the farmers could secure town service and also get access to the toll lines reaching to the county seat and the metropolitan center of the district. These contracts between the groups of farmers and the larger systems operating in the cities and connecting with the long-distance toll lines made these farmers' groups or mutual companies, as many of them were called, a part of a larger system — sometimes the Bell, sometimes the independent — and marked the first step toward attaining the ultimate end of telephone service, which is to enable every one who has access to a telephone to reach every other person who can reach one.

"The connection with the more important systems in a way furnished all the telephone service needed for the second period of development, but a third step had to follow. In many cases, as these little mutual farmers' lines took on more subscribers and extended from farm to farm, they began to overlap one another in the territory served, a fact which in the natural sequence of events led to the consolidation of these lines and the formation of larger systems. As a result of this process of consolidation the purely mutual character of the ownership became weaker. In order to secure a proper maintenance of the lines and those uniform methods of operation and construction which are essential to good service, it was found necessary for their ownership to take the corporate form; and to-day a very large number of incorporated telephone companies exist in the United States controlled by a regularly elected board of directors, which are in reality nothing but a combination of small groups of farmers forced by the circumstances to take the form of a corporation."

"The establishment of the farmers' lines is, of course, inexpensive, so far as cash expenditure is concerned. The farmer contributes what he has the most of, that is, labor and material, and is called upon for the smallest possible amount of what he finds it hardest to secure, that is, cash. For a company to undertake this construction would require enormous sums of money, and this money would represent simply the conversion of one form of wealth into another with no gain in the total wealth. The farmers build these lines in their spare time, that is, in the time which otherwise would not add anything to the wealth of the community, but which by this means is directly converted into permanent wealth.

"To maintain the telephone line it is customary for the various members of the association to become responsible either for that portion of the line located on their farms, or for some other definite portion of the system, and inasmuch as the service on the whole line depends upon the proper maintenance of every portion of the line, if any one of the members neglects to keep up his portion he soon finds himself in disfavor with all the other members of the group. On the other hand, the farmer who knows that a friend is responsible for the quality of the service on his telephone line is far more lenient toward small interruptions in the service or faults in transmission than he is under similar circumstances when the service is furnished by a company. When, in course of time, it becomes necessary as a result of the expansion of the system to secure the services of some one who shall give his whole time to seeing that the line and the instruments are kept in proper repair, farmers' boys are found growing up in every country community who take an interest in electrical and mechanical methods, and who gladly devote themselves to this work for a very moderate amount of cash payment, their ambition being to learn the methods of operating.

"The operating expense of the telephone service is likewise small. A switchboard placed in a farmer's house and attended by the farmer's wife and daughters makes but little demand upon the time of any one, and this service is given for a minimum cash payment. The mere fact of having the switchboard, the center of the farmers' group, is often a source of sufficient pride to cause this work to be done for nothing.

"Thus it happens that in the earlier days of a farmers' telephone system, when the plant is small and is carefully looked after by the members of the association, the cost of the service is very trifling. Later on the plant grows old and deteriorates and requires more repairs. The number of subscribers increases, and the operators must spend their entire time at the switchboard. Storms come, and the partially worn-out plant succumbs more readily to the weather. The result is that at the end of the year the members of the association find that the expenses have been greater than in previous years, and much larger than they had ever figured on. This produces dissatisfaction, but still the telephone service has become so indispensable that it must be continued. When this stage has been reached, the association usually feels obliged to become a regular company and very often to consolidate with its neighbors, in order that the consolidated company may secure a technical man the cost of whose services can be apportioned among a sufficiently large number of subscribers so that this charge will but slightly increase the burden of each.

"Very few of those who express dissatisfaction with the increased expense of the telephone service which results from the conditions indicated, stop to think of the reasons for this increased cost of service, and of the increased value which their telephones now possess. As the system has grown, the investment has naturally become greater, and inasmuch as the newer subscribers are located at points more distant from the center of the group than were the first, the investment in poles and wires for each subscriber has become greater. So, too, the investment in the switchboard becomes greater with the growth of the system. A small switchboard for a hundred subscribers can be installed for about $4 a subscriber, while for a thousand subscribers such a board might easily cost $20 for each subscriber.

"Similar conditions exist with regard to the work of operating the switchboard. The farmers at first do not consider the fact that where there were 20 subscribers, and each one could talk to but 19 others, the daily number of calls from each subscriber was small. When the number increased to 300, each subscriber could reach 299 others, so that the demand for telephone calls became greater. The result was that with a small number of subscribers the average farmer would resort to the telephone three times a day. When he could reach 299 of his neighbors he might call up 10 of those a day. This increased number of calls would mean, of course, that an operator could attend to fewer lines than had formerly been the case. With 20 subscribers, each of whom gave but three calls a day, there would be but 60 calls, so that the operator would have a great deal of spare time, and would not need to stay at the switchboard, but could go to it when the bell rang. With 300 subscribers, and an average of 10 calls a day for each subscriber, the number of calls daily would be 3000. If these calls were distributed equally over the entire day, they could still be handled by one girl without difficulty if she gave her entire time, but telephone calls, even in rural districts, are not so distributed. The morning is apt to be a busy time on the farm lines, when business is being transacted with the adjoining town, plans made with neighbors, and orders given of one kind and another. A practical lull then ensues during the major part of the day, followed by a sudden rush of business about supper time, when the telephone visiting begins and the members of the farm-line telephone associations discuss all the events of the day and happenings past, present, and to come, and make appointments for business and for pleasure. During this time the farmers' telephone board is a very busy place, so that the number of patrons a single operator can attend to is smaller, and consequently more operators must be employed to handle the calls. As the number of subscribers and of calls increases, this demand upon the operator becomes such that each must be given fewer and fewer lines to attend, especially if their lines are frequently used, so that where one girl might in the early stages of telephone development easily attend to 100 or even 150 lines, a point is reached where a girl may have all that she can possibly do to satisfy 60 subscribers.

"These facts make it apparent that as a telephone system grows the cost grows likewise, and all through the country the farmers have found themselves obliged, in order to keep up their plant and furnish the kind of service which they feel they want, to increase their assessments in the case of mutual associations, or to raise their rates in the case of the incorporated companies. The one thing which the farmer has often failed to see is that with this increase in cost has come a great increase in the value of the service. When he was able to reach only a dozen neighbors, and was not connected with any village, the service was of value to him, but still not of great value. After he was connected to the nearest village exchange, and was able to reach 300 subscribers, the service became immensely more valuable, and this service he still obtained for a minimum of cost. As the country filled up and the number of people connected with his telephone system increased up to the thousands, while the cost to him may have increased a few dollars a year, still the increase in the value of the service which resulted from the fact that it reached so many more persons was many times greater than the small additional expenditure required of him. In actual dollars and cents the additional profits which the farmer, in selling his products, may make on a single transaction through having the facilities of quick communication with the trading centers would in many cases suffice to pay the cost of a telephone for his entire lifetime."

CHAPTER XIII

MUTUAL INSURANCE

THE coöperative method of conducting business is applied extensively to rural insurance. The mutual insurance companies sometimes cover a state, but more often are confined to a county or township. There were fifteen hundred town and mutual companies in the United States in 1911. The mutual companies are formed by groups of farmers or property-owners to insure themselves against fire and lightning, tornadoes, cyclones, windstorms, hailstorms, and against the loss of stock, the insurance to be done at actual cost. In Europe the insurance of cattle against death from diseases and the insurance of persons engaged in agricultural work have developed into large undertakings. The expenses of these companies are low. They pay comparatively small salaries to the management, the rents for quarters are low, and all of the operations are conducted economically. The stock corporation companies, on the other hand, are conducted on a much more elaborate and expensive scale, and the farmer who insures his property through them therefore pays a relatively higher insurance rate, the premiums generally amounting to three or four times as much as the premiums or assessments charged by the mutual companies. The farmers of Minnesota, for example, according to Mr. Valgren, through their mutual companies are saving three-quarters of a million dollars annually in premiums. The Minnesota Act authorizing the formation of township mutual insurance companies was passed in 1875, and of the one hundred and fifty or more associations formed since that time, none has failed.[1]

The formation and management of the mutual companies must conform to the insurance laws of the state, the mutual companies being subject to the same supervision as that exercised over the stock corporation insurance companies. In forming a mutual company, a group of farmers or other property-owners residing in the same town or county or in a number of adjoining towns who own collectively from $50,000 to $250,000 worth of property, or whatever amount is prescribed by the state law, form themselves into a company or corporation for mutual insurance against fire, hail, cyclone, or against such other catastrophes as the state laws provide. When agreements have been entered into for insurance by the number of people prescribed by the law, usually twenty-five or more, and a certain proportion of the premiums are actually paid in, and the remainder secured by notes or bonds in the possession of the association, the company takes out a certificate of incorporation, and, after approval by the state officials, is ready to transact a mutual insurance business.

A PLAN FOR A MUTUAL INSURANCE COMPANY

There are two methods of organizing mutual insurance companies. In one of these a fixed premium is charged to all those who insure, somewhat after the plan of the old-line companies. From these premiums a surplus is accumulated from which the losses are paid, and when the surplus is not large enough to cover losses, the members are assessed *pro rata* to cover the losses. In the second method, no premium is paid upon the insurance, but a fee is collected at the time a policy is issued to cover the cost of examining the property and other expenses in connection with issuing the policy. The members are under a written agreement to pay a *pro rata* share of the loss sustained by the company whenever a loss occurs.

---

[1] "Farmers' Mutual Fire Insurance in Minnesota," Victor Nelson Valgren, *Quarterly Journal of Economics*, Harvard University, Feb., 1911.

In some states each company has to provide and maintain as a reinsurance reserve a fund equal to a certain proportion of the amount received annually from premiums. This provision applies especially to the state mutuals. Under the first method of organization, in addition to the annual premium a member pays, he may be legally liable to the association for a still greater amount when unusual losses occur, in Iowa, for example, the maximum liability of a member equaling not "less than a sum equal to the basis rate charged by the association for insurance nor greater than a sum equal three times such basis rate." In other states each member by agreement may be liable for his *pro rata* share of all the liabilities carried by the company, the maximum amount of the liability usually being plainly stated on the face of each policy. When a loss occurs, the extent of the loss is determined by the company, and the amount is paid from the assessment or from the reserve fund.

One may gain an idea of the extent of the mutual insurance business from the annual reports of the state insurance officials, there being, for example, one hundred and fifty township mutual fire insurance companies in Minnesota in 1911 and seven mutual hail and cyclone insurance companies. The insurance in force in the township mutual fire insurance companies at the end of 1911 was $295,219,952. The amount in force in the mutual hail associations was $6,145,340, and in the mutual cyclone companies, $38,278,197.[1] In Iowa in 1911 there were nineteen state mutual fire insurance companies, one hundred and fifty-three county mutual fire companies, nine exclusive hail insurance companies, and one mutual tornado company. The risks written by the Iowa state and county mutual assessment associations in 1911 amounted to $175,718,435, the losses paid $1,235,637.12, and the risks in force $653,324,809.[2]

THE STRENGTH OF THE MUTUAL INSURANCE ASSOCIATIONS

The strength of the mutual insurance companies, like any other coöperative business enterprise, lies in the acquaintance of the members with each other, the restricted area in which they operate, the care with which the hazards can be determined and the policies issued. The weakness lies in their inability to pay the losses whenever a very general disaster occurs on account of the small volume of business, the small assets, and the inability to collect assessments from the members. There is a large moral element in all kinds of insurance. In the town and county mutuals, the moral risk is very low because the intimate acquaintance of the members insures against the overvaluation of property and the issuing of policies to dishonest people, and it prevents dishonest practices which a person might engage in when dealing with the large insurance corporations located at a distance. Many of the states safeguard the mutual associations against losses that might occur from unusual conflagrations by prohibiting their operation in the larger villages and cities, by confining their operation to restricted territories such as a single town or county or at most to a small number of towns or counties, and by restricting their operations to non-hazardous risks. The kinds of property that can be insured by a mutual insurance association is usually defined by law, in Minnesota the statute providing: —

---

[1] Preliminary Fire Report, Department of Insurance for the year ending December 31, 1911.

[2] Forty-third Annual Report of the Auditor of State of Iowa, on Insurance, p. viii.

"Nor shall any township mutual fire insurance company insure any property other than dwellings and their contents, farm buildings and their contents, live-stock, farm machinery, hay, grain, in the bin or stack, churches, schoolhouses, society and town halls, country blacksmith shops and their contents, parsonages and their contents, and the barns and contents used in connection therewith, butter-makers' dwelling houses and contents, and barns and contents used in connection therewith.

"No such company shall insure any property within the limits of any city or village except that located upon lands actually used for farming or gardening purposes, but whenever the dwelling house of any person insured is within the limits of a town where the company is authorized to do business, and the farm on which such dwelling is situated is partly within and partly without such town, it may include in such insurance any outbuildings, hay, grain, stock, or other farm property on such farm outside such limits."

STATE MUTUAL ASSOCIATIONS

The mutual assessment associations, like other co-operative businesses, begin to lose in safety and strength when they attempt to operate as state mutuals or in other large geographical areas. Under these conditions the personal contact and acquaintance of member with member are weakened, the risks cannot have the personal examination that local mutuals give, the powers of the association have to be delegated to employees or agents, the moral hazard increases, and the assessments are likely to grow in number and in size. While some of the state mutuals are successful, their general condition compares unfavorably with that of the local associations. The status of the state mutuals is set forth by Mr. Solomon S. Huebner of the Wharton School of Finance and Commerce of the University of Pennsylvania, to whom the author is indebted for many of the points of view in this chapter,[1] as follows: —

"Many attempts have been made, usually with unsuccessful results, to apply the mutual plan of fire insurance over one or more states. But these state mutuals, while retaining the objectionable features of the local mutuals — namely, lack of assets, small volume of business, and assessments — also lack their elements of strength. The moral hazard is increased as the territory within which a mutual company does business increases. When such mutuals attempt to write insurance throughout an entire state, they necessarily come into competition with the wealthier and more firmly established stock companies, and cannot secure business except at inadequate premiums. They also lack the business organization and the trained staff of experts possessed by the stock companies, and to secure business in sections far removed from the home office, must depend upon agents for the soliciting of insurance and the selection of risks. The result is that the service is not of the best, and the supervision over the selection of risks is woefully inferior to that of the local companies.

---

[1] "Property Insurance," pp. 60–61, 1911.

"As long as the company grows and policy-holders are not called upon to pay assessments, the management hears few complaints, and few members find occasion to trouble themselves about its affairs. The officers in too many instances ambitiously strive to rapidly increase their business, and in doing so depend upon agents, whose interest it is to write as much insurance as possible. But in the course of time the poor selection of risks begins to bear fruit. The low premiums are found woefully inadequate, and assessment after assessment must be collected from the policy-holders to meet the ever-increasing claims. It is then that the policy-holders begin to rebel against what they regard as unreasonable charges. As the claims against the company become more pressing, it in turn must resort to pressure, and even litigation, to collect the assessments, and then follows wholesale withdrawals and at last bankruptcy.

"This has been the story of the great majority of state mutuals. By extending their activities over too large a territory, personal supervision could not be exercised over the risks accepted, and powers delegated to employees were too often abused or inefficiently exercised. The rates were too low and the hazardous risks too many, and the result could not be other than failure. We are informed that at a recent date only two or three out of the seventy-four state mutuals in New York in 1853 were still in existence. To insure their greater safety, a number of states have passed laws with special reference to their organization and operation. The number of applications for insurance which must be in hand before their organization is perfected is usually much larger than is required for local mutuals. The class of business which they may accept is carefully limited in certain states, while in others a limit is placed upon the amount of insurance which may be written on any one risk."

BIBLIOGRAPHY

The following list includes the leading references to the various forms of coöperation outlined in the foregoing pages: —

ADAMS, E. W. "The Modern Farmer." W. J. Stone Company, San Francisco, 1899.

AIKEN, D. W. The Grange, its origin, progress, and educational purposes. Washington, Government Printing Office, 1883.

ALBERTSON, H. H. "Among the Farmers of the Central West," *Arena*, May, 1908, V. 39: 632–635. "Coöperative Farmers in Politics," *Arena*, June, 1908, V. 39: 763–766.

AVES, ERNEST. "Coöperative Industry." London: Methuen & Co., 1907.

BAILEY, L. H., ed. "Coöperative Marketing in Fruits," *Cyclopedia of American Agriculture*, Vol. IV, pp. 265–267. New York, 1909.

—— Chapter on Community Action in "The Country-Life Movement." New York, 1911.

BARRETT, CHARLES SIMON. "The Mission, History, and Times of the Farmers' Union." Marshall & Bruce Co., Nashville, Tenn.

BEMIS, E. W., Coöperation in New England, Publications of American Economic Association, Vol. I, No. 5. Baltimore, Guggenheimer, Weil and Co., 1886.

BLISS, R. K. Iowa Extension Bulletin, 7. "Coöperative Cow-Testing Associations in Iowa."

BRAND, R. E. (See Fraser.)

BROWN, W. H. "Coöperative Agriculture." (In Bliss, W. D. P., ed. *New Encyclopedia of Social Reform*, pp. 305–306. New York, 1908.)

BUGBY, M. O. (See Goddard.)

BUSH, C. R. (See Bliss.)

Butterfield, K. L. Chapters in Rural Progress. Chicago, University of Chicago Press, 1908.

Card, F. W. "Coöperative Fire Insurance and Telephones." (In Bailey, L. H., ed. *Cyclopedia of American Agriculture*, Vol. IV, pp. 303–306. New York, 1909.)

Chandler, W. H. "Coöperation among Fruit-Growers." Bulletin 97, University of Missouri, College of Agriculture, 1911.

—— Committee on Agriculture, Coöperative Land-Mortgage Banks, Hearings, May 29, 1912. Senate Joint Resolution 75.

—— Commissioner of Corporations, on Cotton Exchanges, Report of the.

Coulter, J. L., and **Morman**, J. B. "Coöperation in the Marketing of Farm Produce," *American Economic Association Quarterly*, S. 3; V. 10, 1, pp. 258–274. 1909.

—— "Economic Organization of Rural Life," Proceedings of Twelfth Conference for Education in the South, 1909, pp. 112–129.

—— "Organization among Farmers in the United States." New Haven, Conn. 1909. 28 pp. (Yale Review Reprints, No. 10.)

Coulter, J. L. "Coöperation among the Farmers." Sturgis and Walton Company, 1911.

Crissey, F. "Coöperation close to the Soil," *Everybody's Magazine*, September, 1909, V. 21: 406–416.

Dalhoff, **John**. "Agricultural Coöperation in Denmark: its Developments and Present Conditions," *International*, January, 1909, V. 4, pp. 105–109.

Dean, H. H. "Canadian Dairying," Toronto, W. Briggs, 1906, Part 2, Chapter 1.

Drysdale, **John**. "Coöperation in Agriculture." (In Green, C. E., and D. Young, eds. *Encyclopedia of Agriculture*, Vol. 1, pp. 438–449. Edinburgh, 1908.

Eyerly, E. K. "Successful Coöperation among Fruit-Growers, *Journal of Political Economy*, February, 1909, V. 17: 92–95.

Fay, C. R. "Coöperation at Home and Abroad." New York: The Macmillan Co., 1908. 403 pp.

Ford, **James**, Ph. D. Coöperation in New England: Urban and Rural. Survey Associates, Inc. New York, 1913.

FOSTER, F. J. The Grange and the Coöperative Enterprises in New England. Annals of the American Academy of Political and Social Science, Vol. IV (March, 1894).

FRASER, W. J. "Dairy Suggestions from European Conditions." Urbana, Ill. 1909. Illinois Agricultural Experiment Station Bulletin, 140.

GODDARD, L. H. Ohio Agricultural Experiment Station Circular 99.

GRABEIN, MAX. Wirtschaftliche und sociale Bedeutung der landlichen Genossenschaften in Deutschland. Tübingen: H. Laupp, 1909. 195 pp.

HALE, E. E. "History of Coöperation in the United States," Johns Hopkins University Studies in History and Politics, V. 6, 1888.

HAYS, W. M. "Coöperation in Agriculture." Washington, 1910. 10 pp.

——"Coöperation true Americanism." Raleigh, N.C., 1908.

HECHT, FELIX, ed. Jahrbücher des europaischen Bodenkredits. Leipzig: Duncker and Humblot, 1909, 1 vol.

HERRICK, MYRON T. Report on Land and Agricultural Credit in Europe. Division of Information. Department of State, October 10, 1912.

HIBBARD, B. H. "Coöperation in the Grain-elevator Business." (In Bailey, L. H., ed. *Cyclopedia of American Agriculture* V. IV, pp. 267–269. New York, 1909.)

HOBSON, RICHMOND P. "Agricultural Credit Banks," by O. R. Hobson, Congressional Record, Vol. 48, No. 194, 62d Congress. Second Session, Washington, Friday, July 26, 1912. 10273 pp.

HOLMES, GEORGE K. Systems of Marketing Farm Products and Demand for such Products at Trade Centers. Report 98. Office of the Secretary, U. S. Department of Agriculture.

HUMPHREY, G. C. "Community Breeders' Associations for Dairy Cattle Improvement." 1910. Bulletin 189, University of Wisconsin, Agricultural Experiment Station, Madison, Wis.

HUTT, W. N. "Marketing Fruit and Truck Crops." (In Maryland Agricultural Experiment Station. Twentieth Annual

Report, March, 1907, Bulletin 116, pp. 211–257. College Park, Md., 1906–1907.)

KELLEY, O. H. Origin and Progress of the Order of the Patrons of Husbandry in the United States; a history from 1866 to 1873. Philadelphia, J. A. Wagenseller, 1875.

KEMMERER, E. W. "Agricultural Credit." (In Bailey, L. H., ed. *Cyclopedia of American Agriculture*, Vol. IV, pp. 269–276. New York, 1909.

KLIMMER, WILHELM. "Die Entwickelung des landwirtschaftlichen Genossenschaftswesens in Grossherzogtum Baden," Düsseldorf: Druck van Haas & Wittke, 1906. 194 pp.

LEWIS, C. I. "The Apple from Orchard to Market." Bulletin 94, Oregon Agricultural Experiment Station, Corvallis, Oregon, 1907. (Treats of coöperative fruit organizations.)

LORENZONI, G. "An Outline of European Credit Systems." International Institute of Agriculture, Rome, Italy.

LUBIN, DAVID. "The International Institute of Agriculture and Coöperative Banking." Rome, Italy, 1909.

LUICK, H. F. (See Bliss.)

MARKER, C. "Some Phases of Dairying in Denmark." Bulletin 4, Department of Agriculture, Dairy Commissioner's Branch, Ottawa, Canada, 1905.

MCNEIL, A. "Coöperation in the Marketing of Apples." Bulletin 18, Dairy and Cold Storage Series, Department of Agriculture, Ottawa, Canada.

MORMAN, J. B. "Business Coöperation Organizations in Agriculture." (In Bailey, L. H., ed. *Cyclopedia of American Agriculture*, Vol. IV, pp. 255–264. New York, 1909.)

MYRICK, H. "How to Coöperate." New York, 1891. 349 pp.

——"Coöperative Finance and American Methods for the American People, 1912.

NELSON, N. O. "Coöperative Movement in the United States," *Outlook*, 89: 525–529. July 4, 1898. Right Relationship League of Minnesota.

PADDOCK, W. "Fruit-Growers Associations." Fort Collins, Colo., 1907. Colorado Agriculture Experiment Station Bulletin 122.

PENNINGTON, M. E. "Studies of Poultry from Farm to Consumer." Bureau of Chemistry Circular 64, U. S. Department of Agriculture, 1910.

PLUNKETT, SIR HORACE. "The Rural Life Problem of the United States." The Macmillan Company, New York, 1910.

POWELL, F. W. "Coöperative Marketing of California Fresh Fruit," *Quarterly Journal of Economics*, February, 1910, V. 24: 392–418.

POWELL, G. HAROLD. "Coöperation in the Handling of Fruit." Yearbook U. S. Department of Agriculture, 1910, pp. 391–406.

—— California Fruit Growers' Exchange, in Report 98. Office of the Secretary, U. S. Department of Agriculture.

PRATT, E. A. "The Transition in Agriculture." London: J. Murray, 1906. 354 pp.

—— "The Organization of Agriculture." London, 1904. 403 pp.

RABILD, H. "Cow-Testing Associations," May 1, 1911. Circular 179.

RASMUSSEN, FREDERICK. "Cattle-Breeders' Associations in Denmark." Bureau of Animal Industry, Bulletin 129. U. S. Department of Agriculture, Feb. 17, 1911.

RICARD, J. H. "Les Syndicats agricoles et leurs revendications," *Revue Politique et parlementaire*, Jan. 10, 1910, V. 63: 41–65.

ROMMELL, GEO. M. "Suggestions for Horse and Mule Raising in the South." Bureau of Animal Industry, Circular 124, U. S. Department of Agriculture.

RUDDICK, J. A. (See "Ottawa" under "General.")

RUDLOFF, H. L. "Die Genossenschaftsbewegung der Getreideproduzten in den Vereinigten Staaten Nordamerikas," *Fühling's Landwirtschaftliche Zeitung*, May 1, 1908, V. 57: 321–334.

—— Senate, Preliminary Report on Land and Agricultural Credit in Europe. 62d Congress, 3d Session, Document 967.

STREETER, G. C. "Coöperative Elevators," *Farm and Fireside*, V. 32, No. 18, pp. 1–4, 1909. "Grain Coöperative Societies in Illinois and Iowa."

Slocum, Rob. R. "Marketing Eggs through the Creamery." Farmers' Bulletin 445, U. S. Department of Agriculture, 1910.

Todd, S. E. "Agricultural Coöperation." Bulletin 192, Ontario Department of Agriculture.

Tousley, E. M. "Coöperation among Farmers." 1910. 16 pp.

Whitely, C. F. (See "Ottawa" under "General.")

Wiedfelt. "Agricultural Coöperation." (A review of 12 important works on the subject.) *Quarterly Review*, London, V. 209, pp. 299–320, October, 1908.

—— "Agricultural Credit Banks." Great Britain Board of Agriculture and Fisheries, Leaflet 214. 1908.

Wolff, H. W. "Coöperative Banking, its Principles and Practice," with a chapter on Coöperative Mortgage-credit. London: P. S. Ling and Son, 1907. 301 pp.

—— "People's Banks." London, 1893. 261 pp.

—— "Beginnings of Coöperation in Canada." *Economical Review*, London, 18: 22830. April, 1908.

Woll, F. W. "The Wisconsin Dairy Cow Competition," December, 1909. Circular of Information 9.

Wright, C. D. Coöperative Distribution in Massachusetts. 17th Annual Report Massachusetts Bureau Statistics of Labor, p. 49. Boston, Wright and Potter Printing Co., 1886.

—— A Manual of Distributive Coöperation. Boston, Wright and Potter Printing Co., 1885.

GENERAL REFERENCES

American Coöperative Journal. Published by American Coöperative Publishing Company, Chicago, Ill.

Belgium. Ministere de l'agriculture.

—— Expose statistique de la situation des associations d'interet agricole pendant l'année 1903–1907. Bruxelles, 1904–1908. 5 vols. in 1.

Bibliographie der Socialwissenschaften; hrsg. Von Dr. Hermann Beck in *Auftrage des Internationalen Institutes fuer Sozial-Bibliographie in Berlin.* 1905–1908. Berlin, 1906–1909. 4 vols.

Canada. Special committee on industrial and coöperative societies. Reports. Ottawa, 1907. 204 pp.

Cape of Good Hope. Department of Agriculture. Report of the Superintendent of Agricultural Coöperation. Cape Town, 1906. 1905–1906. 1 vol.

"Coöperation." (Monthly.) Published by Coöperative Education Bureau, Minneapolis, Minn.

"Coöperation and Cost of Living in Certain Foreign Countries." Document 617. House of Representatives, 62d Congress, 2d Session.

"Coöperative Distribution." Bulletin of the Department of Labor, 6, September, 1896. Edited by Carroll D. Wright and Orrin B. Weaver, Chief Clerk, Government Printing Office, Washington, D.C.

Coöperative Association of America: The Coöperator, Lewiston, Me., 1901–1902.

"Coöperative Societies for the Purchase of Farming Requisites." Great Britain Board of Agriculture. *Journal*, March, 1909: 917–924.

Country Life Commission. Report. Washington, 1909. pp. 56–57: "The Necessity of Working Together."

Industrial Commission, Report of the. "Distribution and Marketing of Farm Products." Vol. VI of the Commission Report. Government Printing Office, Washington, 1901.

International Coöperative Alliance. Bibliographie coöperative internationale. London: International coöperative alliance, 1906. 276 pp.

New South Wales, Department of Agriculture. "Coöperative Organizations of Fruit-Growers." Farmers' Bulletin 26, 15 pp.

Summary of the Present Status of Agricultural Insurance Societies in Certain Countries. Bulletin of the Bureau of Economic and Social Intelligence, January, 1911, pp. 133–170.

Telephones. Bureau of the Census. Government Printing Office, Washington, D.C., 1907.

COW TESTING AND BREEDING

Cow-testing Associations. Circular 179, May 1, 1911. H. Rabild.

Iowa Extension Bulletin 7. "Coöperative Cow-testing Associations in Iowa," by R. K. Bliss, C. R. Bush, and H. F. Luick; Ames, Iowa; April, 1911.

Maine Department of Agriculture, Bulletin 4.

Michigan Dairy and Food Department. Bulletins 137, 155, 179; Lansing, January, 1907–July, 1910.

"The Wisconsin Dairy Cow Competition," F. W. Woll, December, 1909. Circular of Information, 9.

Ottawa Department of Agriculture. Dairy and Cold Storage Commissioner's Branch, Bulletins 4, 5, and 12. October, 1910, Ottawa, Canada.

CREAMERIES

Bureau of Animal Industry, Bulletin 10, U. S. Department of Agriculture. Minnesota Agricultural Experiment Station, Bulletin 35. South Dakota Experiment Station, Bulletin 46. Andelsbladt No. 49, pp. 849–850. Aarhus, Dec. 9. 1910.

DAIRYING

"Dairy Suggestions from European Conditions," Urbana, Ill., October, 1909. Illinois Agricultural Experiment Station, Bulletin 140. See W. J. Fraser, and R. E. Brand.

Ohio Agricultural Experiment Station, Wooster, Ohio, March 1, 1910, Circular 99. "Coöperative Dairy Work," by L. H. Goddard and M. O. Bugby.

DEAN, H. H. "Canadian Dairying," Toronto, W. Briggs, 1906, Part 2, Chapter 1.

New York Produce Review, V. 28, 7, p. 308. New York, June 10, 1909.

New York Produce Review, V. 7, 336, p. 11. New York, April 9, 1908.

"Practical Dairyman," V. 3, 25, p. 299. Rutherford, N. J., Feb. 24, 1910.

INDEX

Abuses in fruit trade, 206.
Associated methods of selling fruit, 235.
Auction company, 202.

Bank credit, 282.
Banking systems for rural credit, 271.
Bibliography, 317.
Boll weevil, 183.
Breeders' and growers' associations, 87.
Brokers, fruit, 199.
Business system for coöperative creameries, 148.
Butter, coöperation in the manufacture of, 135.
By-laws of a citrus fruit association, 55.

California Fruit-growers' Exchange, 241.
California law relating to coöperative associations, 46.
Carey Act enterprises, 258.
Cattle-breeding, coöperative, 95.
Centralizer creameries, 146.
Central packing-house for fruit, 226.
Changes in industrial methods, 1.
Changes in labor methods, 3.
Charter of a citrus fruit association, 52.
Citrus distribution, coöperative methods, 247.
Citrus fruit association, charter of, 52.
Citrus fruit membership agreement, 32.
Citrus fruits, remedy for decay in, 216.
Citrus fruits of California, 239.
Citrus Protective League of California, 75.
Cold-storage for fruits, 231.
Commission merchant, 201.
Company system of horse-breeding, 106.
Constitution and by-laws of a farmers' elevator company, 132.
Coöperative fruit associations, 212.
Coöperative organization of a federation, 67.
Corn-breeding associations, 112.
Corporations for distributing fruit, 200.
Cost of credit to the American farmer, 277.
Cotton, acreage of, 188.
Cotton, distribution of, 184.
Cotton, price of, 188.
Cotton crop, annual, 182.
Cotton industry, coöperation in, 182.
Cow-testing associations, coöperative, 89.
Creamery, the American, status of, 144.
Creamery, organization of, 137.
Credit, cost of, to the American farmer, 277.
Credit, rural, 271.
Credit unions, coöperative, 274.
Credit unions, Jewish, 274.
Crop improvement, coöperative, 109.
Crop lien, 279.

Dairy federation, coöperative, 152.
Danish cattle-breeding associations, 95.
Danish cow-testing associations, 89.
Dishonest commission merchants, 208.
Dissatisfaction among farmers, 10.
Dividends, payment of, 83.

Economic mistakes of cotton-growers, 195.
Efforts towards organisation, 11.
Egg business, 161.
Eggs, coöperation in handling, in other countries, 177.
Eggs, marketing, through the creamery, 168.
Elevators, grain, farmers' coöperative, 122.

Farmers' Union, 185.
Farm products, coöperative distribution and sale, 120, 248.
Federation of coöperative associations, 64.
Fertilizers, commercial, restriction in use of, 195.
Financing a coöperative organization, 78.
Fortier, Samuel, 259.
Fruit, coöperation in handling, distributing, and sale of, 197.
Fruit, distribution of, 198, 234.
Fruit rots, 213.
Fruit trade, abuses in, 206.
Fruit trade, retail, 204.
Fruit-growers' supply company, 254.
Fundamentals in coöperation, 18.

Grading fruit, 218.
Grain-distributing system, 123.
Grain elevators, farmers' coöperative, 122.
Growers' and breeders' associations, 87.

Handschin, W. F., 99.
Harvesting fruit, coöperation in, 215.
Herrick, Ambassador, 273, 292.
Hood River Apple-growers' Union, 221.
Horse-breeding, coöperative, 105.
Huebner, S. S., 313.

Illinois Corn-breeders' Association, 115.
Individual credit system, 278.
Industrial methods, changes in, 1.
Insurance, mutual, 308.
Irrigation, coöperation in, 258.

Jewish Agricultural and Industrial Aid Society, 274.
Jewish credit unions, 274.
Jobbers, fruit, 201.
Jordan, Harvie, 188.

Labor methods, changes in, 3
Landschaften, 271, 291.
Legal features of coöperative organizations, 40.
Live-stock, coöperative breeding of, 94.
Lorenzoni, Doctor, 272, 285.
Loss, economic, in rural efficiency, 8.

Management of coöperative organizations, 36.
Membership in a farmers' organization, 25.
Milk, coöperation in distribution and sale of, 153.
Milk producers, organization of, 156.
Minimum price of cotton, 190.
Minnesota, coöperative cattle-breeding in, 99.
Mormon colonies, irrigation by, 259.
Mutual insurance, 308.

National League of Commission Merchants, 208.
Nebraska law relating to coöperative associations, 46.
New York Dairymen's League, 159.

Organization, efforts towards, 11.
Organization of a farmers' coöperative association, 52.

Packing fruit, 218.
Pennington, Miss., 161.
Perishable fruit, selling of, 237.
Pierce, Mr., 161.
Political questions, 73.
Pooling fruit, 227.
Price of fruit, fixing a, 246.
Prosperity of the American farmer, 6.
Public policy questions, 73.
Purchase of supplies, coöperation in, 250.

Raiffeisen banks, 271, 286.
Remedy for decay in citrus fruits, 216.
Retail fruit trade, 204.
Rommel, G. M , 106.
Rot of fruits, 213.
Rural credit, 271.
Rural efficiency, economic loss in, 8.
Rural telephone, 299.

Schulze-Delitzsch banks, 271, 290.
Slocum, Mr., 166.
Southern Cotton Association, 185.
Store Credit system, 280.
Supplies, coöperation in purchase of, 250.
Supply company, organization of, 250.

Tait, C. E., 261.
Teele, R. P., 258.
Telephone, rural, 299.

Voting power of members of farmers' organizations, 27.

Warehouseman, 203.
Warehouses for cotton, 190.
Water companies in Southern California, 261.
Wisconsin cattle-breeding associations, 98.
Wisconsin law relating to coöperative associations, 45.

UNIV. OF MICHIGAN,
JUN 28 1913

THE following pages contain advertisements of a few of the Macmillan books on kindred subjects

Latest Additions to the

RURAL SCIENCE SERIES

EDITED BY PROFESSOR L. H. BAILEY
Director of the New York State School of Agriculture at Cornell University

Sheep Farming

BY JOHN A. CRAIG AND F. R. MARSHALL

Illustrated, cloth, 12mo, $1.50 net

This book deals with sheep husbandry as a phase of intensive farming. Recognizing that it is likely to be used by persons unfamiliar with sheep, the authors have worked from the standpoint of the producer of the market stock rather than from the standpoint of the professional breeder. The various breeds are discussed in such a way as to enable the reader to select the kind that is most likely to do well under his conditions and to acquaint him with the care it is accustomed to and needs. The management of the flock in the fall, winter, spring, and summer seasons, the formation of the flock, the selection of foundation stock, and the means of maintaining a high standard of flock efficiency are all discussed in subsequent chapters.

Principles of Fruit Growing

BY PROFESSOR L. H. BAILEY

New edition, cloth, 12mo, $1.50 net

Since the original publication of this book, in 1897, it has gone through many editions. The progress of fruit growing in the meantime has been very marked and it has been necessary to completely rewrite the work. The present issue of it brings the accounts of the new practices and discoveries as they relate to fruit growing up to date. All of the text and practically all of the illustrations are new.

THE MACMILLAN COMPANY
Publishers 64-66 Fifth Avenue New York

RURAL SCIENCE SERIES — *Continued*

Farm Forestry

By E. G. CHEYNEY

Illustrated, cloth, 12mo, $1.50 net

This book deals with the place of the wood lot or farm forest in the scheme of farming, with the planting, care, and harvesting of timber on lands, with the different species of trees that may be used, their relations or associations in a forest plantation, the rate of growth, the profits to be expected, and the principal difficulties that are usually encountered. It is profusely illustrated.

Forage Crops for the South

By S. M. TRACY

Illustrated, cloth, 12mo, $1.50 net

Professor Tracy has had long experience in Southern agriculture, both in application and in teaching. He was formerly Professor of Agriculture in the Mississippi Agricultural College, and now conducts a branch station or farm for the United States Department of Agriculture. He is a botanist of note and has traveled extensively in the South as a collector. His book is not only authentic, but practical. In it is contained a discussion of all kinds of plants and crops adapted to the Southern States for fodder, soiling, pasturing, and hay. The text is abundantly illustrated.

THE MACMILLAN COMPANY
Publishers 64-66 Fifth Avenue New York

RURAL SCIENCE SERIES — *Continued*

Fruit Insects

By M. V. SLINGERLAND and C. R. CROSBY

Illustrated, cloth, 12mo, $1.50 net

This is a practical account of the principal insects in this country which attack the different kinds of fruits — trees, fruits, small fruits, cranberries, grapes, and the like. It presents a full but brief outline life history of the leading insects together with the methods of control.

Milk and Its Products

By HENRY H. WING

Professor of Dairy Husbandry in Cornell University

New Revised Edition, with new illustrations, cloth, 12mo, $1.50 net

The revolution in dairy practice, brought about by the introduction of the centrifugal cream separator and the Babcock test for fat, by a more definite knowledge regarding the various fermentations that so greatly influence milk, and the manufacture of its products, have demanded the publication of a book that shall give to the dairyman, and particularly to the dairy student, in simple, concise form, the principles underlying modern dairy practice. Such has been Professor Wing's purpose in this work. This is not a new edition of the author's very successful volume published under the same title many years ago; it is, in reality, an entirely new book, having been wholly reset and enlarged by the addition of new matter, both text and illustrations. The author's aim has been at all times to give the present state of knowledge as supported by the weight of evidence and the opinions of those whose authority is highest.

THE MACMILLAN COMPANY

Publishers 64–66 Fifth Avenue New York

RURAL SCIENCE SERIES

Edited by L. H. BAILEY

On Selection of Land, etc.

Isaac P. Roberts' The Farmstead	$1 50

On Tillage, etc.

F. H. King's The Soil	1 50
Isaac P. Roberts' The Fertility of the Land	1 50
F. H. King's Irrigation and Drainage	1 50
Edward B. Voorhees' Fertilizers	1 25
Edward B. Voorhees' Forage Crops	1 50
J. A. Widtsoe's Dry Farming	1 50
L. H. Bailey's Principles of Agriculture	1 25

On Plant Diseases, etc.

E. C. Lodeman's The Spraying of Plants	1 25

On Garden-Making

L. H. Bailey's Garden-Making	1 50
L. H. Bailey's Vegetable-Gardening	1 50
L. H. Bailey's Forcing Book	1 25

On Fruit-Growing, etc.

L. H. Bailey's Nursery Book	1 50
L. H. Bailey's Fruit-Growing	1 50
L. H. Bailey's The Pruning Book	1 50
F. W. Card's Bush Fruits	1 50

On the Care of Live-stock

Nelson S. Mayo's The Diseases of Animals	1 50
W. H. Jordan's The Feeding of Animals	1 50
I. P. Roberts' The Horse	1 25
M. W. Harper's Breaking and Training of Horses	1 50
George C. Watson's Farm Poultry. New edition	1 50

On Dairy Work, Farm Chemistry, etc.

Henry H. Wing's Milk and Its Products	1 50
J. G. Lipman's Bacteria and Country Life	1 50

On Economics and Organization

I. P. Roberts' The Farmer's Business Handbook	1 25
George T. Fairchild's Rural Wealth and Welfare	1 25
H. N. Ogden's Rural Hygiene	1 50
J. Green's Law for the American Farmer	1 50

THE MACMILLAN COMPANY
PUBLISHERS 64-66 Fifth Avenue NEW YORK

Latest Additions to the

RURAL TEXTBOOK SERIES

EDITED BY PROFESSOR L. H. BAILEY
Director of the New York State School of Agriculture at Cornell University

---

Farm Management

BY G. F. WARREN, PH.D.
Professor of Farm Management in the College of Agriculture at Cornell University

Illustrated, cloth, 12mo; preparing

It is not enough for the farmer to secure good crops. He must secure them at low cost. If a farm is to bring the largest financial success, it must be efficiently organized and managed. In this book the author discusses at length the various phases of farm efficiency. Among the topics treated are the following: the selection and purchase of a farm; the selection of the type of farming adapted to the conditions; the most efficient size of farm for different kinds of farming; the horses and equipment; capital and its proper distribution in the farm business; ways of starting farming with small capital; methods of renting farms with their advantages from the standpoints of the owner and farmer; the management of machinery, horses, and men; field and building management; cropping and feeding systems; the marketing of farm products; methods of keeping farm records and accounts.

Obviously, this book should be in the hands of every farmer or agricultural student, while to the instructor of Farm Management it will be welcome as the long-awaited, and, we believe, the only satisfactory textbook for use in a long or short course.

Animal Husbandry

BY MERRITT W. HARPER
Professor of Animal Husbandry in the New York State College

Illustrated, cloth, 12mo; preparing

This is a simple, concrete presentation of the essential facts concerning farm animals, adapted for use in secondary schools.

THE MACMILLAN COMPANY
Publishers 64-66 Fifth Avenue New York

Manures and Fertilizers

By H. J. WHEELER, Ph.D., D.Sc.

Formerly Director of the Rhode Island Experiment Station

Illustrated, cloth, 12mo; preparing

The clear and unusually full discussion of the practical utilization of manures and fertilizers of all kinds, and of their relations to the plant and to the soil, makes this book not only an excellent text for college students, but also one which will be generally welcomed by all up-to-date agriculturists. All the animal manures, litter, and waste nitrogeneous materials of every sort are discussed. A helpful feature for the student is the extended treatment of the availability of organic nitrogen and of the organisms contained in barnyard manure which give rise to the various fermentations taking place therein. The well-known, and also the new, nitrogenous manures such as calcium cyanamid and calcium nitrate are considered in detail. The chapters devoted to the potash salts, phosphates, lime, magnesia, soda, gypsum, iron, and manganese are exceptionally complete, and chlorin, sulfur, silica, carbon disulfid, toluene, and other substances exerting catalytic and other effects are described. Much of the material in this book which will be new to students and other readers has suggested itself to the author in the course of twenty-two years of continuous research.

Corn Crops

By E. G. MONTGOMERY

Professor of Farm Crops in the College of Agriculture at Cornell University

Preparing

This is a textbook on corn and the sorghum crops, including the grain sorghums, the sweet sorghums for sirup or forage, and the broom corns. In it plant structures, physiology, and the other technical phases of the subject are separated from the more practical phases which might be classed as cultural methods. Hence, the entire book is adapted to use as a text in an advanced course, and the treatment of cultural methods is adapted to use in more elementary courses. The book is also an excellent handbook for farmers and others interested in the production or handling of corn or sorghums.

THE MACMILLAN COMPANY

Publishers 64–66 Fifth Avenue New York

Cyclopedia of American Agriculture

Edited by L. H. BAILEY

Director of the College of Agriculture and Professor of Rural Economy, Cornell University.

With 100 full-page plates and more than 2,000 illustrations in the text; four volumes; the set, $20.00 net; half morocco, $32.00 net; carriage extra

VOLUME I—Farms	**VOLUME III—Animals**
VOLUME II—Crops	**VOLUME IV—The Farm and the Community**

"Indispensable to public and reference libraries . . . readily comprehensible to any person of average education."—*The Nation.*

"The completest existing thesaurus of up-to-date facts and opinions on modern agricultural methods. It is safe to say that many years must pass before it can be surpassed in comprehensiveness, accuracy, practical value, and mechanical excellence. It ought to be in every library in the country."—*Record-Herald*, Chicago.

Cyclopedia of American Horticulture

Edited by L. H. BAILEY

With over 2,800 original engravings; four volumes; the set, $20.00 net; half morocco, $32.00 net; carriage extra

"This really monumental performance will take rank as a standard in its class. Illustrations and text are admirable. . . . Our own conviction is that while the future may bring forth amplified editions of the work, it will probably never be superseded. Recognizing its importance, the publishers have given it faultless form. The typography leaves nothing to be desired, the paper is calculated to stand wear and tear, and the work is at once handsomely and attractively bound."—*New York Daily Tribune.*

THE MACMILLAN COMPANY

PUBLISHERS 64-66 Fifth Avenue NEW YORK